Engaging post-conflict agricultural communities in research through a case study of coffee growers in Timor-Leste

Kerrie Jane Stimpson

Southern Cross University
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Kerrie Jane Stimpson

Bachelor of Applied Science
Bachelor of Environmental Science (Honours)
School of Environment, Science and Engineering
Southern Cross University, Australia

Thesis submitted in fulfilment of the requirements for the degree of
Doctor of Philosophy

November 2017
Thesis declaration

I certify that the work presented in this thesis is, to the best of my knowledge and belief, original, except as acknowledged in the text, and that the material has not been submitted, either in whole or in part, for a degree at this or any other university.

I acknowledge that I have read and understood the University's rules, requirements, procedures and policy relating to my higher degree research award and to my thesis. I certify that I have complied with the rules, requirements, procedures and policy of the University (as they may be from time to time).

Signed .................................. Date 28th November 2017
Abstract

The ethical debate around cross-cultural approaches to traditional development and research programs in less economically developed countries is well documented in the post-development literature. While much of the literature promotes the ideal of achieving a culturally sensitive approach, there is little guidance for researchers on how to achieve this collaboratively. This is particularly problematic in countries with the additional challenges of post-conflict status, as is the case for Timor-Leste.

This thesis uses the lens of post-development theory to develop a collaborative research approach, through a case study of the contribution of coffee production to the social and economic development of Timor-Leste’s coffee growers. Agricultural communities in Timor-Leste were engaged to collaborate in the ‘Timor-Leste Coffee and Poverty Project’ guided by a participatory action research approach. This thesis explores how this participatory action research approach can be used to provide empowerment opportunities through research in the context of a post-conflict country.

The research was conducted over five participatory action research cycles with data collected through surveys, key informant interviews, research observations and reflective journals. The evolution of a greater understanding of the role of participatory action research for empowering agricultural communities is examined and a conceptual model for empowering post-conflict communities through participatory action research is proposed.
Acknowledgements

To those who have supported me, believed in me and encouraged me.

To begin I would like to acknowledge the support of my supervisors Associate Professor David Lloyd and Dr Kristin den Exter. Thank you for the toolbox of wisdom and knowledge that has been at my disposal over the years and for the amazing experiences that have been afforded to me through my academic studies and academic life. Most of all, thank you for believing in me and this thesis. Thank you also to my Monash University collaborators Professor Brett Inder and Dr Katy Cornwell who have also provided rich insight and hard work into this project.

In regard to the Timor-Leste Coffee and Poverty Project discussed in this thesis I wish to acknowledge the funding from an AusAID Australian Development Research Award. This research project would not have been possible without this support. Thank you also to the wonderful Timorese research team who contributed to this project. I feel so honoured to have worked with each and every one of you. Thank you for your patience and understanding through this learning experience and for the hard work that was contributed. I feel we should all be very proud of what we achieved and experienced together.

To my friends who have supported me and understood that this journey would make me absent for periods of time. Knowing that this support existed throughout has been such a gift.

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## Abbreviations

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<th>Full Form</th>
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<tbody>
<tr>
<td>AusAID</td>
<td>Australia’s Aid Program</td>
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<tr>
<td>CCT</td>
<td>Cooperativa Cafe Timor</td>
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<tr>
<td>DGE</td>
<td>General Directorate of Statistics</td>
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<tr>
<td>DFID</td>
<td>Department for International Development</td>
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<tr>
<td>ECOSOC</td>
<td>United Nations Economic and Social Council</td>
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<td>ETICA</td>
<td>East Timor Coffee Academy</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>HDI</td>
<td>Human Development Index</td>
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<td>ICA</td>
<td>International Coffee Agreement</td>
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<td>ICO</td>
<td>International Coffee Organisation</td>
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<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
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<tr>
<td>IPCC</td>
<td>Intergovernmental Panel on Climate Change</td>
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<tr>
<td>LEDC</td>
<td>Less Economically Developed Country</td>
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<tr>
<td>MAF</td>
<td>Ministry of Agriculture and Fisheries</td>
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<td>MDGs</td>
<td>Millennium Development Goals</td>
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<tr>
<td>NCBA</td>
<td>National Cooperative Business Association</td>
</tr>
<tr>
<td>NDP</td>
<td>National Development Plan</td>
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<tr>
<td>NGO</td>
<td>Non-Government Organisation</td>
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<td>PAR</td>
<td>Participatory Action Research</td>
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<tr>
<td>PDT</td>
<td>Post-development Theory</td>
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<tr>
<td>PMAP</td>
<td>Portuguese Mission Agriculture Program</td>
</tr>
<tr>
<td>PUSKUD</td>
<td>East Timor Centre for Village Unit Cooperatives</td>
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<tr>
<td>Abbreviation</td>
<td>Full Form</td>
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<tr>
<td>SCU</td>
<td>Southern Cross University</td>
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<tr>
<td>SDGs</td>
<td>Sustainable Development Goals</td>
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<tr>
<td>UNCED</td>
<td>United Nations Conference on Environment and Development</td>
</tr>
<tr>
<td>UNDESA</td>
<td>United Nations Department of Economic and Social Affairs</td>
</tr>
<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organisation</td>
</tr>
<tr>
<td>UNDP</td>
<td>United Nations Development Program</td>
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<tr>
<td>UNFPA</td>
<td>United Nations Population Fund</td>
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<tr>
<td>UNMIT</td>
<td>United Nations Integrated Mission in Timor-Leste</td>
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<tr>
<td>UNTL</td>
<td>National University of Timor-Leste (Universidade Nacional Timor Lorosa’e)</td>
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<tr>
<td>USAID</td>
<td>The United States of America’s Aid Program</td>
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## Commonly used terms

**AID agencies**
Organisations dedicated to distributing aid. Many professional aid organisations exist, both within government, between governments as multilateral donors and as private voluntary organisations (or non-governmental organisations).

**Capacity building**
Efforts aimed to develop human skills or societal infrastructures within a community or organisation needed to reduce the level of risk.

**Coffee - cherry**
The ripe coffee fruit that is picked.

**Coffee - parchment**
When the fruit is removed and the nut inside is dried, but the thin white shell remains around the bean.

**Coffee - silver skin**
After the hard white parchment shell is removed, leaving the thin, papery silver skin.

**Coffee - green bean**
After the silver skin is removed in a process known as polishing.

**Coffee - form**
Most times this will be referring to the ‘form’ that coffee is sold in, i.e. parchment form or cherry form.

**Developed countries**
Industrialised countries with high incomes and human capital.

**Developing countries**
Countries with limited industry or in the process of industrialisation. The category of developing countries also includes Least Developed Countries (LDCs) and Less Economically Developed Countries (LEDCs).

**Fair Trade**
These companies negotiate directly with the growers or producers of products to establish a fair price for the product. In commodities such as coffee, organisations have committed to paying a price and following procedures, which meet needs of the small growers even when the world market is below that price.

**First World**
First World initially the capitalist, industrial, developed countries who aligned with the United States after World War II and included mostly the countries of North America, Western Europe, Australia and Japan. In today's society the First World is viewed as countries who have the most advanced economies, the greatest influence, the highest standards of living, and the greatest technology.
Free Trade  A term based on a theory in economics, but in reality the practice is something quite different. The theory of free trade contends that everyone in the world will be better off if each nation eliminates tariffs and other barriers to the flow of products across borders. The practice of "free trade" departs from theory by including the export of money either for investment purposes or speculation. With firms able to move both money and products around the world, the benefits of lower prices and higher wages have not been enjoyed by most people. In addition, under recent "free trade" agreements, the concept of barriers to trade has been expanded to include domestic regulations, public health and human rights measures, and environmental protection laws, which inhibit business activity.

Globalisation  The term frequently used to identify a trend toward increased flow of goods, services, money, and ideas across national borders and the subsequent integration of the global economy. However, the term is also used to refer to a deliberate project led by powerful institutions, people, and countries like the United States to apply a single template of economic strategy and policy—"market fundamentalism"—to all countries and all situations.

Less Economically Developed Countries  This is a country that is considered lacking in its economy, infrastructure where the citizens have low incomes, a low standard of living and poverty.

Millennium Development Goals  The Millennium Development Goals (MDGs) were adopted unanimously by the Millennium Summit of the UN General Assembly in 2000. The MDGs are intended to promote human development in order to improve living conditions and address key global imbalances in poverty, hunger and disease.

Neoliberalism  A view of the world based on the belief that the optimal economic system is achieved by giving free reign to market participants, privatisation, minimal restrictions on international trade, and the shrinking of government intervention in the economy. Critics argue that neoliberal policies prioritise corporate profits over the welfare of the working majority and society at large.

Poverty  The condition of not having the means to afford basic human needs such as clean water, nutrition, health care, clothing and shelter.

Sustainability  Meeting the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainable Development Goals  Sustainable Development Goals (SDGs) are a group of 17 goals that build on the MDGs as a call to end poverty and protect the planet.
**Third World**  
A term sometimes used to refer to the economically poor, politically and militarily weak, relatively unstable, and dependent states of the world, most of which emerged from colonialism in fairly recent history.

**United Nations**  
An international organisation composed of most of the countries of the world. It was founded in 1945 to promote peace, security, and economic development.

**World Bank**  
Officially called the International Bank for Reconstruction and Development, this bank was established in 1944 to provide loans for the reconstruction of Europe. In the 1970s the World Bank’s focus shifted to assist in the reconstruction and development of its poor members by facilitating capital investment, making loans, and promoting foreign investment. The Bank has historically focused on large infrastructure and other development projects.
## Non English terms

<table>
<thead>
<tr>
<th>Term</th>
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<tbody>
<tr>
<td><em>Aldeia</em></td>
<td>Village</td>
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<tr>
<td><em>Bee Nains</em></td>
<td>Water lords</td>
</tr>
<tr>
<td><em>Lulik</em></td>
<td>Spiritual power associated with certain places, objects or persons</td>
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<tr>
<td><em>Malae</em></td>
<td>Foreigner</td>
</tr>
<tr>
<td><em>Mambai</em></td>
<td>The largest ethnic group in Timor-Leste</td>
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<tr>
<td><em>Mate Klamar</em></td>
<td>Ancestor’s spirits</td>
</tr>
<tr>
<td><em>Rai Nains</em></td>
<td>Spirit owners of the land</td>
</tr>
<tr>
<td><em>Suco</em></td>
<td>Small Village</td>
</tr>
<tr>
<td><em>Tetum</em></td>
<td>A local language spoken widely in Timor-Leste (one of two official languages)</td>
</tr>
<tr>
<td><em>Uma</em></td>
<td>Traditional ancestral homes</td>
</tr>
<tr>
<td><em>Umalulic</em></td>
<td>Sacred houses</td>
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Chapter One: Introduction

1.1 Overview

Alleviating poverty and empowering communities have been goals high on the agenda of the United Nations (UN), non-government organisations (NGOs) and international aid agencies for decades (Rapley, 2004). The critical questions arise, however, as to the best possible methods to achieve these goals of poverty alleviation and empowerment, and the role of the researcher when research is being conducted, particularly in less economically developed countries (LEDCs). Development in LEDCs is a debated issue on which development approach should be taken. Development started with industrialisation and then was shaped into a concept post World War II (WWII) and the theories that contribute to development practice, while varied, result in a Western perspective shaping the global South (Kothari, Minogue & DeJong, 2002; Pieterse, 2000). Post-development theory (PDT) challenges the power dynamics of traditional development theory and criticises the shortcomings of development theory and policy (Escobar, 1995; Matthews, 2004; Pieterse, 2001). Research in LEDCs is widespread; this is particularly the case for Timor-Leste (Kingsbury & Leach, 2007). In order to develop a research project that more closely reflected the concepts of PDT a participatory action research (PAR) approach was used for the Timor-Leste Coffee and Poverty Project discussed in this thesis.

Even though action research usually starts with a fuzzy question and methodology, this is suitable as long as each cycle continues to add to the clarity (Dick, 1993). Action research uses a process of cycles that over time will converge to produce something that is more useful for understanding and action (Dick, 2004). Participatory action research adds the dimension of sharing between researchers and participants in the research, but still maintains use of an action research cycle. Participatory action research involves the iteration of four phases: understanding - create awareness and understanding; problem definition - specify problems or needs; act - take action; and reflection - reflect or monitor (Ruechakul, Erawan & Siwarom, 2015).
The research project discussed in this thesis was designed with the initial aim of using a participatory action research approach to develop the Timor-Leste Coffee and Poverty Project, with household surveys conducted to gather baseline data on coffee growers in Ermera, the main coffee growing district in Timor-Leste, to inform national agricultural policy and allow coffee communities to make informed decisions about crop choices and economic activity. Through the participatory action research process however, the research project evolved to have the main trajectory focusing on the challenges and lessons learned while conducting the research, and the importance of how the ‘collaborative approach’ is developed and maintained in order to achieve both a project’s aims and the empowerment of all involved.

The remainder of Chapter One sets the scene and provides an overview of this thesis and the central themes that will be explored. Chapter Two presents literature on the issues of poverty and the role and challenges of development and gives a brief outline of development theories, with a particular focus on post-development theory. The post-conflict context is outlined, ethics in research and empowerment theory is considered, as well as the role of participatory action research and capacity building in development, especially in LEDCs. Chapter Three then sets the scene for the Timor-Leste context by providing an overview of the history, social and economic aspects, culture and the agricultural sector with a particular focus on coffee, concluding with a discussion on Timor-Leste’s involvement with development and aid. The participatory action research design and methodology are outlined in Chapter Four, followed by a chapter containing the five participatory action research cycles that took place during the course of the research (Chapter Five). Chapter Six discusses the role of participatory action research in empowering agricultural communities, presenting a conceptual model for empowerment in the context of a post-conflict country. The thesis concludes in Chapter Seven with implications of the research, opportunities for further research and finishes with the researcher’s final reflection.

This thesis contributes to the literature on participatory action research for cross-cultural collaborative capacity building and empowerment when conducting research in a post-conflict context. Based on key informant interviews, surveys and reflective journal entries, this thesis offers insights for researchers into the cross-cultural collaborative research approach and outcomes through a case study of coffee growers in Timor-Leste.
1.2 Setting the scene

1.2.1 Population increase and Millennium Development Goals

At the time of writing this thesis, the world’s population had just reached 7.5 billion (United Nations Population Fund [UNFPA], 2017). The United Nations Population Fund (UNFPA) suggests that “a world of seven billion has implications of sustainability, urbanisation, access to health services, and youth empowerment” (UNFPA, 2011). Recent estimates suggest that as of 2013, 10.7% of the world’s population were still living below the international poverty line set at US$1.90 a day, compared to 12.4% in 2012 and 35% in 1990 with most of the world’s poor being concentrated in rural areas and mainly employed in agriculture (World Bank, 2017). In 2000, 189 world leaders at the United Nations Millennium Summit, adopted the UN Millennium Declaration and with the Millennium Development Goals (MDGs) to end poverty by 2015 (United Nations Development Program [UNDP], 2012). As well as eradicating extreme poverty and hunger, the MDGs also sought to have global primary education, empower women and the promotion of gender equality, improve maternal health and reduce child mortality, fight diseases such as HIV/AIDS, guarantee environmental sustainability and generate global partnerships with a focus on development (Millennium Project, 2006). While the MDGs did have some positive outcomes with reductions in extreme poverty and child mortality, the progress globally was mixed with some goals having slow or no progress (Millennium Project, 2006).

At the end of the 15 year period of the MDGs, a new set of goals was adopted by 193 world leaders, called the Sustainable Development Goals (SDGs), to begin on 1 January, 2016, with a new list of 17 goals to be accomplished by 2030, again with a primary focus on the eradication of extreme poverty and hunger (United Nations [UN], 2015). The areas of government, the private sector and NGOs have all played various roles in achieving and assessing the success of the MDGs. Since the end of WWII these three areas have contributed to global development and have played active roles in the many LEDCs around the world that are still trying to break the poverty cycle.
1.2.2 Agricultural and post-conflict areas are of concern

Areas of particular concern are often associated with countries and regions that have a high dependence on subsistence agriculture; especially around the tropics. The agricultural sector of the tropics is often not very productive, including annual food crops, as a result of the fragile soils exposed to high temperatures and heavy rainfall (Sachs, 1999). Adding to the concern are areas that are also in post-conflict recovery which face the added challenges of peace-building through initiatives of conflict management for sustainable peace, in order to lessen the risk of experiencing more violent episodes (United Nations Economic and Social Council [ECOSOC], n.d.). To respond to the challenges of peace-building for post-conflict countries, the United Nations (UN) has committed to consulting with relevant parties regarding peace-building strategies and to develop these strategies in consultation with the political, security, development and humanitarian sectors (ECOSOC, n.d.). A logical extension to this is the development of appropriate and ethical strategies for researchers and development agencies working with these affected communities.

1.2.3 Development

The major issues affecting LEDCs, is the reduction of poverty and environmental degradation, and affecting sustainable growth. Agriculture is the basis of the livelihood and employment for 65% of the world’s poorest (World Bank, 2017). Agricultural research has often determined that the poor who are reliant on natural resources are particularly vulnerable to environmental degradation through depleting resources, such as forest destruction and overgrazing of lands which is not sustainable (Khan, 2008).

In order to address these problems affecting LEDCs, development strategies have been devised and implemented, then re-evaluated and re-implemented, in order to meet objectives of alleviating poverty, increasing living standards through economic development, and encouraging environmental sustainability (Kothari & Minogue, 2002). The concept of development is complex and difficult to define, making it problematic to address issues associated with this approach.
The perception of development is often viewed as an idea of progress and the notion of modernisation (Bury cited in Savage, 2006). Yet development is not only about building infrastructure such as museums and airports. Savage (2006, p. 44) describes the purpose of development as:

“... enhancing the software of society, of releasing creativity and talent in people, about ensuring individuals and families a better quality of life, safeguarding individual freedoms and equality and maintaining cultural integrity and pride...ensuring an equitable spread of wealth and economic benefits within society.”

Development policies in LEDCs need to have realistic visions, comprehensive planning and be pragmatic in execution; most importantly they must be sensitively integrated within the “national cultural fabric of a society” (Savage, 2006, p. 44). Robinson, Styles, Evernden and Kirkham (2013) made this a priority when establishing the Heart of Gold Rural Community Empowerment Project, a collaborative research project between Vancouver Island University in Canada and the Farm and Agro-tourism Association of Los Santos cooperative in Costa Rica, using action research, to engage and empower small-scale farming communities dependant on coffee production (Robinson et al., 2013).

This is fundamentally important, as development has not always served LEDCs’ best interests; even the nature of the term ‘developing nations’ has lost much of its original meaning. While originally development portrayed a positive image of all nations steadily developing and improving the lives of the people, instead the outcomes of this development resulted in individuals and nations becoming locked into unstable markets, adopting technologies that redistributed opportunity and wealth and undertaking development plans that were unrealistic (Norgaard, 1994).

1.2.4 Aid and research

Development aid can affect the distribution of power within states and societies, as it is often the case that those that have the money, also have the power (Fox & Gershman, 2000). Funds invested, particularly from large organisations, can affect the balance of power, either encouraging or discouraging development pathways that lead to the accumulation of social capital by the poor (Fox & Gersham, 2000). In complex environments with a multitude of challenges, an interdisciplinary approach is often used to
develop a shared understanding of the complex issues with the community and to respond with practical outcomes, which presents its own challenges for the researcher. These challenges multiply when cross-cultural research is conducted in a post-conflict environment. There are concerns about the relationships that exist between the researcher and the researched (Mohan, 2006). In general, researchers come from a position of privilege while many of the subjects that are being researched account for some of the most vulnerable in the world and are living in conditions that are exploitive and deprived (Benatar, 2002).

It is necessary to recognise the power dynamics that are at play between the “expert” and others, with participatory research approaches acknowledging these inequalities of power (Mohan, 2006). It is essential for the researcher to understand their own thinking and how it fits in with potentially very different viewpoints and the environments of those being researched and the implications of these differences (Benatar, 2002). Effective communication must be ensured between researchers and their subjects. In LEDCs where culture, language and other obstacles may be present, this can present challenges. For example, researchers have documented the problems that are encountered when getting consent to undertake the research in these circumstances (Lindegger & Richter, 2000). In post-conflict situations, in order to maintain the ethical aims of the research, the security, privacy and well-being of the subjects of the research must be protected as well as the researchers themselves where it is essential to constantly monitor if the results of the research justify the risks involved (Wiles, Charles, Crow & Heath, 2010).

In Timor-Leste, as a post-conflict LEDC, resolving the gap between proposed research aims and actual research outcomes is imperative for Timor-Leste development to move forward and to maximise research potential while achieving the aspirations of both the community and visiting researchers. This is where the concept of cross-cultural collaborative research can be an effective approach. Cross-cultural collaborative research is “where [the cross-cultural] research participants and the researchers are equal partners in the research process and where all parties benefit from the research” (Gibbs, 2001, p. 674).
1.3 Thesis focus

1.3.1 Disciplinary pedigree – cultural geography

The primary motivation for this thesis has been to conduct and examine how research in LEDCs can be conducted with a strong focus on empowerment through the research methods employed. For the researcher as an environmental scientist turning cultural geographer, the question on how to improve environmental conditions globally arose. Geographers can fall into two categories, ‘physical’ geographers who study landforms, soils, climate and vegetation; and ‘human’ geographers. ‘Cultural geography’ is a sub-set of human geography (Smith & Norwine, 2009). This discipline covers a broad and diverse field with numerous ways of understanding culture by “crossing the blurred border with other fields of study” (Blunt, Gruffudd, May, Ogborn & Pinder, 2003). Cultural geography research gave this study the opportunity to range into other disciplines. Geographers concentrate on describing evolution and change taking place in their experiential world (Bonanno cited in Lloyd, 2005). Lloyd (2005), in reference to the disenfranchisement of various community sectors from the position of protecting land areas, discusses that the role of the academic community, and in this case specifically geographers, is to “demystify and re-empower sectors of society whose interests have been marginalised.”

1.3.2 Thesis themes

Despite the substantial amount of foreign aid that has entered Timor-Leste since independence, a large percentage of the rural population still lives in poverty; many of these rural poor are coffee growers (Lothe & Peake, 2010). This issue of widespread poverty in the coffee producing areas of Timor-Leste gave rise to partnerships and collaboration between Australian universities, a Timorese university and a ministry in the Timorese government. The research project was initially designed to identify whether engagement in coffee production at a household level contributed to economic and social well-being, and discuss if the coffee production sector was a poverty trap for the rural poor. The main trajectory of this thesis however has transformed to reflect upon using a participatory action research approach for ethical cross-cultural collaboration in a post-conflict country.
Therefore this thesis addresses two themes:

1. The results of the Timor-Leste Coffee and Poverty Project

This theme explores the main findings of the Timor-Leste Coffee and Poverty Project that examined how the coffee production sector operates in Timor-Leste. The focus was at the household level, seeking to understand the ways in which coffee producing households manage their coffee production and interact with the market. This research element also examines the social and economic impact on household members of being heavily reliant on coffee as their main source of income.

2. The process of developing and conducting the Timor-Leste Coffee and Poverty Project

The second theme explores the role of participatory action research for engaging agricultural communities in cross-cultural research and the lessons learned during this process. Empowerment opportunities of this approach are explored, particularly in a post-conflict context, and the concepts of post-development theory considered.

1.3.3 Ethnography and research

Ethnography is the study of people and cultures, aimed at exploring cultural phenomena where the researcher observes society from the point of view of the subject. According to Hoey (2014) an ethnographic approach to conduct research is no longer limited to cultural anthropologists who study cultures but instead, can be extended to include research where the aim is cultural interpretation. While the research presented in this thesis is not an ethnography study, the process was informed by it, with an objective to understand the research process, as described by Hoey (2014), through an emic perspective or “insiders point of view.” Ethnography promotes submerging the researcher in the culture for an extended period of time, however this approach is not always feasible for researchers working in LEDCs. The Timor-Leste Coffee and Poverty Project involved seven research trips for the researcher, so this project modified the long-term engagement promoted by ethnography to long-term engagement through multiple research trips and ongoing communication.
1.3.4 Action research

Action research is a process which involves participants in an empowering process of recognising their own knowledge, skills and abilities and is considered essential for community empowerment with both researcher and participants growing in knowledge (Flynn, Ray & Rider, 1994). In order to conduct a cross-cultural collaborative research project a research methodology needed to be selected that was flexible and could incorporate multidisciplinary perspectives and rigour. Action research as a methodological framework is useful in such studies where change may be required, where all the knowledge for change does not exist at the start and can only be developed progressively through further research and critical reflection (Mackenzie, Tan, Hoverman & Baldwin, 2012).

As the overarching methodology, action research also allows the researcher to employ other tools to achieve the research aims. The action research approach is well suited to identifying and responding to the needs of groups and individuals, and particularly relevant in a cultural context where techniques can be used to help empower participants. Action research produces increased autonomy for those who participate and allows for people to improve their own lives and communities (Aragon & Glenzer, 2017). Action research changes to participatory research depending on who is involved and how much they are involved in each of the cycles of the research. It is the most participatory if the participants are collaborators in the design, methods, activities and evaluation of the project (Mackenzie et al., 2012). Therefore a participatory action research approach was selected for the Timor-Leste Coffee and Poverty Project and is explained in more detail in Chapter Four when the research design of the project is discussed.

1.3.5 Reflection

“It is not sufficient simply to have an experience in order to learn...it is from the feelings and thoughts emerging from reflection that generalisations or concepts can be generated, and it is generalisations that allow situations to be tackled effectively” (Gibbs, 1988, p. 14).

Reflection is a main element of action research and therefore self reflection will be used throughout this thesis to provide further insights as the participatory action research cycles unfold, and to highlight the researcher’s thought process and direction at relevant stages.
Smith, Bratini, Chambers, Jensen & Romero (2010) outline the essential part that self-reflection plays when undertaking PAR since this self-reflection can display to the researcher their biases and preconceptions, and can reveal the often unintentional patronising attitudes that underlie the intentions of academics. It involves the researcher attempting to “sometimes uncomfortably, to place our own transformation into the picture – affecting and being affected and not just intervening to improve others” (Aragon & Glenzer, 2017, p. 3).

1.4 Researcher’s background and motivation

Following from the previous section on the importance of reflection in action research, it is also important to reflect on the background and motivation of the researcher. This is the first example of personal reflection outlined in this thesis and is characterised here and throughout the thesis by the use of comic sans font.

I became involved in the Timor-Leste Coffee and Poverty Project through an interest in social justice that complimented the skills and knowledge I had gained through completing a degree in Environmental Science. My interest in environmental protection and ethics can be traced back to my early childhood. From the day I made the decision at an early age to become vegetarian, I believed that individual people could make a difference, and collectively change the world. This passion for animal welfare grew into a deeper understanding that in order to protect species, it was crucial to protect environments, thus I pursued a degree in Environmental Science. Through this degree I was exposed to the nature of global coffee production, in particular in Timor-Leste. It was now evident that in order to protect environments a greater understanding of people’s practice and motivations was required. Conducting ethical and empowering research was the main motivator in this thesis. In a cross-cultural context it became apparent that in order to achieve this, the research process needed to be collaborative and the lines of communication open.
During my time in Timor-Leste I travelled to eight of the thirteen districts, including the island Atauro. I stayed with several different Timorese families over the years, taught English at three locations, completed a Tetum course, attended a wedding and have been to a funeral. I witnessed the poverty and felt hopeless, I saw the harshness of the landscape and the residual effects of an occupation that has not broken the spirit of its people and felt honoured by how welcome I was made to feel. Too many stories were told to me from Timorese, aid workers and expatriates of failed or half finished projects. People said that working in Timor-Leste was so difficult, yet I was surprised by how many researchers were not working closely with a Timorese organisation to conduct their projects. More disturbing to me were the projects that were telling Timorese communities that they needed to change based on research approaches that seemed seeped in colonial undertones. These experiences shaped the direction of the research project discussed in this thesis to go beyond the project to reflect on how research can be more ethically conducted in LEDCs to create opportunities for empowerment.

1.5 Scope and significance of the research

1.5.1 Research questions

This thesis looks at two research questions:

1. What role is coffee playing in the development of Timor-Leste households?

2. How can cross-cultural research projects be conducted to achieve research outcomes and promote empowerment and engagement for communities in post-conflict, less economically developed countries?
1.5.2 Aims and objectives

1. To understand the challenges in development to break the poverty cycle in less economically developed post-conflict countries.

2. To understand the unique context of Timor-Leste and the role that agricultural commodities, specifically coffee, play in development on a national and household scale.

3. To identify challenges and strategies for researchers to achieve research project aims and empowerment through engaging communities.

4. To explore post-development theory as a guide for conducting collaborative research for ethical research in post-conflict, less economically developed countries.

5. To construct a conceptual model for empowerment through participatory action research for researchers working in less economically developed countries, to undertake engaging, collaborative research.

Research question 1 will be addressed as an outcome of the Timor-Leste Coffee and Poverty Project through the inclusion of a final report of this project included in Appendix H and with key findings to address this question outlined in a summary section within Chapter Six. Research question 2 is the main research question explored in this thesis which emerged from the process of investigating and addressing research question 1. It is addressed through the process of the outlined five participatory action research cycles in Chapter Five and further discussed in Chapter Six through the discussion and construction of a conceptual model to explore empowerment through participatory action research for researchers.

1.5.3 Significance of the research

Timor-Leste is the poorest country in Asia (Khamis, 2015) and the coffee growers are among the most vulnerable in the world coffee sector. Research in the sector has mainly focused on the plants, harvesting process and yield, however little is known about the human dimension of how the most vulnerable in the industry, coffee producing households, are affected in this sector. Therefore a very important part of this research was to fill this gap in knowledge by making the household the primary focus of extensive data collection.
In addition to the above, further significance of this research is the discussion of conducting cross-cultural research in LEDCs and the role of the researcher. Liamputtong (2010) states that there are many methodological and ethical challenges conducting cross-cultural research, especially to ensure that the research is conducted ethically and considers cultural norms. Smith argues that the issue of power dynamics between the researcher and the subject is something that the researcher needs to be aware of and highlights that “research in itself is a powerful intervention...which has traditionally benefited the researcher and the knowledge base of the dominant group in society” (Smith cited in Goulding, Steels & McGarty, 2016). There is however little guidance for researchers on how to undertake cross-cultural collaborative research (Hepi, Foote, Marino, Rogers & Taimona, 2007) and there are not enough discussions on culturally sensitive methodologies, so researchers are then faced with not only the challenges, but also a lack of information on how to address them and perform sensitive cross-cultural research (Liamputtong, 2010).

This research adds to the emerging academic body of research on ethically conducting research in post-conflict environments from a post-development theory perspective. It provides development agencies and researchers with a detailed ‘insiders’ view of the processes that take place and the impacts of the research process. In addition it provides those wishing to undertake field work in these environments with an introduction to the issues and problems associated with this type of research.
1.6 Organisation of the thesis

A diagrammatic representation of the structure of this thesis is shown in Figure 1. The first four chapters have a ‘traditional’ linear style that represents the progressive foundation for the research and thesis structure. Chapter Five is then made up of five participatory action research cycles and the thesis structure is now represented through a more cyclical nature to reflect the participatory action research approach. In line with an action research cycle approach, each participatory action research cycle identifies a guiding problem or question which should not be confused with the overall thesis research questions or subsequent thesis aims. These participatory action research cycles and the previous chapters are then discussed in Chapter Six and a conceptual model for empowerment is presented, followed by the final conclusion chapter. These all come together to form the thesis ‘Engaging post-conflict agricultural communities in research through a case-study of coffee growers in Timor-Leste’.

Figure 1: Thesis structure including participatory action research cycles
Chapter One: Introduction
This chapter introduces the issues in development and research for a growing global population that faces issues of inequality, especially in less economically developed countries. The importance of context and research approaches is introduced as are the researcher’s motivations. It also provides an outline of the thesis (and each of the chapters), the scope of the thesis and the significance of the research.

Chapter Two: Development and research
This chapter explores the issues and challenges in less economically developed countries surrounding poverty and theories of development leading to a discussion of post-development theory. It provides a summary of the challenges of implementing strategies and international aid distributions to set the scene for a discussion on the importance of capacity building and empowerment particularly in the context of cross-cultural research in post-conflict countries.

Chapter Three: Timor-Leste context
This chapter focuses on Timor-Leste to provide the context for where the research was undertaken. It provides general information on the historical, social and cultural situation of the country and highlights the importance of the agricultural sector in Timor-Leste’s development, with a particular focus on coffee.

Chapter Four: Research design
The participatory action research approach taken is explained and the five participatory action research cycles that occurred around seven research trips to Timor-Leste are introduced. This chapter focuses on introducing the technical and ethical processes that took place to conduct the coffee grower case study and the general methods used for designing, collecting and analysing the household survey data for the Timor-Leste Coffee and Poverty Project.

Chapter Five: Engaging communities in the Timor-Leste Coffee and Poverty Project - Participatory action research cycles
This chapter goes into more detail on the processes and challenges that took place to engage agricultural communities in the Timor-Leste Coffee and Poverty Project and explores the five participatory action research cycles that took place in detail. This chapter uses the Timor-Leste Coffee and Poverty Project as a case study to explore the role of participatory action research in empowerment.
Chapter Six: Discussion and empowerment themes
This chapter draws on the knowledge gained from the data gathered in the previous chapters and examines the lessons learned for researchers conducting cross-cultural research in post-conflict countries. It explores the challenges and opportunities of participatory action research in empowerment. A conceptual model for empowerment through participatory action research for researchers working in post-conflict societies on agricultural and natural resource management is also put forward.

Chapter Seven: Conclusion
This chapter concludes the thesis by highlighting the contributions that the thesis has made to understanding how cross-cultural research can be conducted collaboratively in a post-conflict context using the case study of the Timor-Leste Coffee and Poverty Project. It reiterates the method of inquiry and relates the significance of both the project research results and processes to the concept of post-development theory and provides reflections on the research process and recommendations for further research.
Chapter Two: Development and research

2.1 Introduction

Chapter One introduced the challenges and problems that surround the concepts of development, aid and research in less economically developed countries (LEDCs) and set the scene for discussing the participatory action research (PAR) approach that was used to develop the Timor-Leste Coffee and Poverty Project. The researcher’s motivations for undertaking the study and the scope of the research were discussed, and the thesis structure including five participatory action research cycles (PARCs) was outlined. Chapter Two now builds on this foundation by introducing poverty and exploring development in more detail, and discusses the concepts raised by post-development theory (PDT) when re-evaluating development approaches. This chapter aims to understand the challenges in development to break the poverty cycle in less economically developed post-conflict countries. This chapter also aims to begin exploring post-development theory as a guide for conducting collaborative research for ethical research in post-conflict, less economically developed countries. Attention is given to the discussion of ethics in research and empowerment theory, and the role of participatory action research and capacity building in development.

2.2 Understanding poverty

Poverty is often described in terms of low income with a measurement of US$1.90 a day as outlined by the World Bank’s international poverty line (updated in 2015 from US$1.25 a day), with some areas of the world being more affected than others (World Bank, 2017). In Sub-Saharan Africa 388 million live in poverty, in South Asia 596 million and in East Asia and the Pacific 316 million are impoverished (Read, 2012). Nelson Mandala in 2005 made an impassioned speech regarding the world’s poverty.

“Like slavery and apartheid, poverty is not natural. It is manmade and it can be overcome and eradicated by the action of human beings. And overcoming poverty is not a gesture of charity. It is an act of justice. It is the protection of a fundamental human right, the right to dignity and a decent life. While poverty persists, there is no true freedom” (Pinstrup-Anderson, 2005, p. 1102).
The World Bank defines poverty as:

“Poverty is hunger. Poverty is lack of shelter. Poverty is being sick and not being able to see a doctor. Poverty is not being able to go to school and not knowing how to read. Poverty is not having a job, is fear for the future, living one day at a time. Poverty is losing a child to illness brought about by unclean water. Poverty is powerlessness, lack of representation and freedom” (cited in United Nations Industrial Development Organisation [UNIDO], 2003, p. 1).

Sachs’ (1989) definition of poverty, differentiates between frugalit in subsistence economies, destitution which can occur when growth strategies interfere with subsistence economies and scarcity within the logic of growth and accumulation (cited in Pieterse, 2001). Critics of development would argue that development agencies using the terms empowerment, participation and poverty reduction are able to legitimise their intervention in other’s lives by using such feel-good terms; yet the word poverty is caught up with the very notion of development (Escobar, 1995; Rist, 1997).

Poverty and food security are common concerns for LEDCs with affected households not able to obtain and retain sustainable livelihoods (Oluoko-Odingo, 2009). Poverty has multiple dimensions and is experienced differently by people. It includes a food component as well as health, education, clothing, housing, sanitation, clean water supply, infrastructure, security, communications and empowerment (World Bank, 2005c). Since 1990, extreme rates of poverty have been more than halved globally. Poverty is more than a lack of income and includes hunger, malnutrition, lack of access to services, social discrimination and a lack of participation in decision-making (United Nations [UN], 2017). The United Nations (UN) outlines the following facts about poverty:

1. 836 million people live in extreme poverty worldwide.
2. One in five people living in LEDCs live on less than $1.25 per day.
3. Most of these people live in Southern Asia and sub-Saharan Africa.
4. High rates of poverty are in countries that are small, fragile and conflict affected.
5. One in four children under five has insufficient height for their age.
6. In 2014, each day, 42 000 people abandoned their homes, needing protection, due to conflict (UN, 2017).
There is a link between increasing poverty and environmental degradation in LEDCs which has increased notably since World War II (WWII) despite development initiatives of the UN and other organisations. UN agencies must however recognise that the simple application of western-based science and ‘rational’ methods to problems, is not going to be the most effective solution for engaging communities and addressing developing countries’ problems (Savage, 2006). Environmental degradation is an extremely important issue as the poor often depend on natural resources for their income and due to their poverty they may be contributing to the environmental destruction by depleting resources at a rate that is not compatible with sustainability (Khan, 2008).

Economic growth that improves the situation of the poor is referred to as pro-poor growth. Strategies that reduce poverty would be assisted if the links between poverty alleviation and growth were better understood (Department for International Development [DFID] Policy Division, 2004). Pro-poor growth has been dominant in development thinking and the way it is practiced in the 2000s. Economic growth needed to increase in LEDCs in order to reduce the difference with developed countries and poverty reduction was essential as outlined in the Millennium Development Goals (MDGs). Economic growth has greatly assisted in reducing poverty in East Asia for example, where poverty fell from 33% in 1990 to 9.9% in 2004 (Overseas Development Institute [ODI], 2008).

2.3 Development

Development can be understood as social change that produces conditions for the achievement of human potential. It can refer to the reduction of poverty for those living in LEDCs but it also implies that the social change that is produced by development is empowering and inclusive and is associated with education, economic growth, health care, production of food and governance (Forsyth, 2005). Pieterse (2010, p. 3) defines development as “the organised intervention in collective affairs according to a standard of improvement.” Pieterse (2010) also makes the point that what is considered improvement and what is a suitable intervention does vary depending on “class, culture, historical context and relations of power” (Pieterse, 2010, p. 4).

Development thinking had its beginnings in the nineteenth century in response to the crisis of progress initiated by the industrial revolution (Pieterse, 2000). Development, as a means to alleviate poverty, was born out of the aftermath of WWII. With Western Europe in
ruins, the International Monetary Fund (IMF) and the International Bank of Reconstruction and Development (the World Bank) were established and the United States created the Marshall Plan, known officially as the European Recovery Program to reconstruct the European economies while containing the communist influence (Forsyth, 2005). Vast amounts of aid were given and results quickly achieved (Seligson, 2003). The focus then shifted to the economic development of the world’s poorest countries (Passe-Smith, 2003). The Marshall Plan contributed to the construction of a new international order, and provided a model for aid provision to Southern countries (Forsyth, 2005). In 1949, US President Harry Truman stated in his “Point Four” program that:

“We must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas. The old imperialism – exploitation for foreign profit – has no place in our plans. What we envisage is a program of development based on the concepts of democratic fair dealing” (cited in Helleiner, 2009, p. 189).

Many of those working in the development field would acknowledge that the development strategies implemented after WWII have not achieved benefits for much of the world’s population (Kothari & Minogue, 2002), with some even suggesting that development was constructed by the West, to continue to economically exploit former colonies (Kothari & Minogue, 2002). Development has become an aspiration, a scientific specialty and a global undertaking (Brett, 2001).

While there have been some gains in economic and social development, poverty and inequality persist making this a very problematic issue in development (Kothari & Minogue, 2002) with development strategies failing and the income gap between the developed and developing countries substantially increasing since the end of WWII (Seligson, 2003). The LEDCs became a target for development practices where all the important social and economic aspects of the countries were calculated by experts, such as demographics, economic status, agriculture and trade, natural resources and cultural values, and interventions planned that appeared to be designed to control and were inevitable (Escobar, 1988).

Neo-liberalism, a theory of political economic practices, suggests that the welfare of people is best promoted by allowing for individual entrepreneurial freedoms and skills within institutional structures, and is identified by rights to private property, free markets
and free trade (Harvey, 2005). According to Stanfield and Carroll (2009) however, increasing inequality between countries is a logical result of the “neoliberal one-size-fits-all prescription for economic reform.” Escobar outlines what he describes as ‘the crisis of the neo-liberal model’ (Escobar, 2010, p. 3) which resulted in the growth of unemployment, the links between international trade and national production weakening, massive ecological impacts through the production of mono-crops such as palm oil and sugar cane for use as an agro-fuel, and rises in inequality and poverty in many countries.

The advocates of fair trade maintain that the North-South trade relationships are exploitive and filled with power inequalities and therefore, they reject the neo-liberal proposition that expanded trade will increase social and environmental benefits for everybody (Bacon, 2005). Rees (2002) declares that nearly all national governments and ‘official’ international agencies share a vision of poverty alleviation and global sustainable development which is based on boundless economic development through free trade, which equates human welfare exclusively with the growth of income. However equitable development is essential for human security and sustainability while social justice can only be attained through an “unprecedented level of international cooperation rooted in a sense of compassion for both other peoples and other species” (Rees, 2002, p. 15).

Free trade according to conventional trade theory should benefit all parties by allowing each country to specialise in a few goods/commodities in which it has comparative advantage and trade for all other goods. Yet problems occur since in an open international marketplace developing countries compete with each other, which bids down the prices for their commodity exports in respect to the prices they receive for their imports (Rees, 2002). Economist J. W. Smith describes this as “even more effective than colonialism in appropriating the natural wealth and labours of the undeveloped countries” (cited in Rees, 2002, p. 28). Smith argues that this push for globalisation in the developing world is structured to benefit the wealthy and that the major international institutions leading this push are the IMF and the World Bank, which were not conceived to be development organizations, yet have the focus of creating markets for the developed world written into their charters (Rees, 2002).

Since the mid 1990s a new consensus of development has emerged outlining objectives using buzzwords in development policy such as “poverty reduction”, “empowerment” and “participation” as an important part of formulating solutions. These policies evoke a sense
of having purpose and optimism, a “warm and reassuring consensus” and yet are used to promote this one-size-fits-all development agenda. These nice sounding words also are very useful to those who want to establish their moral authority (Cornwall & Brock, 2005). A one-size-fits-all development agenda that does not acknowledge differences in culture, politics, context, power or difference that exists, “does violence to the very hope of a world without poverty” (Cornwall & Brock, 2005, p. 27).

2.4 Theories of development

According to Brett (2001), development theory is a system of ideas that blends together scientific investigation of the way a social system is operating with persuasive explanations of what needs to be done in order to improve its operation. It operates as both a scientific and policy method; a paradigm which incorporates facts, theories and methods which then provides a scientific community with a basis for its future practice in LEDCs.

The terms underdeveloped, LEDC and Third World are all terms to describe countries with problems of ‘development’ with all of them being controversial as they reflect a paradigm where development is perceived socio-economically. These terms are associated with modernisation theory and reflect the view that development is linear and will eventually result in all countries converging (Clark, 2005).

Modernisation theory proposed that all societies independently passed through a sequence of stages from ‘traditional’ to ‘modern’ on a path of development and is associated with W.W Rostow, Samuel Huntington and Talcott Parsons (Marcus, 2005). Modernisation is the classic aim of development; to catch up with advanced countries (Pieterse, 2010). Development in the 1950s and 1960s was founded on modernisation theory, which did not consider natural resources as a limiting factor to economic growth (Woodhouse, Kothari & Minogue, 2002). However, the theories and practices of development since the 1950s are quite diverse with some being founded on capitalism and others Marxist with the term development based on the idea of some of the world being ‘developed’ and other areas not (Matthews, 2004). In the immediate post-colonial period development was largely an economic concept associated with industrialisation and growth with governments of developing countries employing interventionist policies to develop an industrial base (Reed & Reed, 2009).
By the 1980s faith in market competition re-emerged (Brett, 2001). Economic
globalisation accelerated in the 1980s and the idea of development continued to be closely
aligned to economic growth. However, the promotion of free markets and ‘comparative
advantages’ was now associated with development rather than industrialisation (Reed &
Reed, 2009). Some critics suggest that the programs undertaken by the IMF during the
debt crisis that occurred in the 1980s actually increased poverty and inequality (Forsyth,
2005). The present development agenda continues to be as it has been for decades,
economic growth, reducing poverty, reforming how trade is conducted, reducing
international debt, promoting democracy and decentralisation, environmental issues and
social development (Kothari & Minogue, 2002).

In the twenty-first century virtually all aspects of development policy are affected by
environmental issues. There is growing concern about the growing green house gases
caused by industrialisation and its impact on the world’s climate. The first report to
recognise environmental concerns in development policy was written in 1987 by the
World Commission on Environment and Development and further expressed in 1992 at the
Earth Summit in Brazil (Woodhouse et al., 2002). This first United Nations Conference on
Environment and Development (UNCED Earth Summit) adopted Agenda 21 which
provides a course of action to achieve sustainable development and address environmental
and developmental issues. The development of economies and societies is undertaken by
concentrating on the preservation and conservation of the world’s environments and
natural resources. Agenda 21 also showcases the need for poverty eradication with
developed nations assisting developing nations to achieve reductions in their
environmental impacts and aims for sustainable development (United Nations Department
of Economic and Social Affairs [UNDESA], 2009).

Thus the notion of sustainable development was initiated and an international consensus
and the need to ensure environmental concerns became a part of development policy. The
Brundtland Commission in 1987 defined sustainable development as “development that
meets the needs of the present without compromising the ability of future generations to
meet their own needs” (Woodhouse et al., 2002). This definition does not explain how this
is to be achieved. There is no definition of ‘needs’ nor does it require that these needs are
efficiently met leaving open the possibility that the current generation could live beyond its
needs as long as the needs of the future generations are met (Norgaard, 1994).
Kofi Annan stated; “Our biggest challenge in this new century is to take an idea that sounds abstract – sustainable development – and turn it into a daily reality for all the world’s people” (Kofi Annan - the former Secretary General of the United Nations cited in United Nations Educational, Scientific and Cultural Organisation [UNESCO], 2014).

Norgaard (2010, p. 1219), refers to ‘the delusion of economic growth’ and that in order to get this message across ecological economists advanced the notion of nature being a ‘fixed stock of capital’ that supplies a flow of services. This concept allowed for the promotion of conservation and sustainable development. This developed into a powerful model that shaped environmental policy and management in both the developing and developed world. However, while there are now carbon offsets and ecosystem advisory services in developing countries, global economic growth continues and developed countries continue the delusion of consumption (Norgaard, 2010).

Many critics would argue that sustainable development is not eventuating in poorer countries with this failing being attributed to inadequate transfers of aid (Auer, 2007). There are doubts however, about transferring technical and capital resources to countries that are not advancing institutional reforms in a timely manner (Auer, 2007).

Sachs however considers that:

“The barriers to economic development in the poorest countries today are far more complex than institutional shortcoming. Rather than focus on improving institutions ... it would be wise to devote more effort to fighting AIDS, tuberculosis and malaria; addressing the depletion of soil nutrients and building more roads to connect remote populations to regional markets and coastal ports” (Sachs, 2003, p. 38).

There have been many development strategies explored and implemented over the decades to address the problems that the MDGs highlight. Development through a neo-liberalism approach focused on industrialisation, economic globalisation focused primarily on economic growth, and sustainable development promoted a symbiotic relationship between environment and development processes. An emerging strategy is post-development theory which focuses on empowering the country.
2.5 Post-development theory

While development theorists differed in the means of how to attain development goals, there was little dispute in its desirability with development incorporating rising living standards from rising incomes generating improvements in health, education and personal autonomy (Rapley, 2004). However, everything that development represented began to be questioned (Escobar, 1995; Rahnema & Bawtree, 1997; Rist, 1997; Sachs, 1992). Modernisation is now not as attractive due to ecological concerns and consequences of technological change and westernisation is also no longer attractive in light of it being a time of revaluation of culture and cultural diversity (Escobar, 2010) with some literature now arguing against the very notion of development stating that development is in crisis (Pieterse, 2001).

This new school of thought, known as post-development theory (PDT), proposes that the concept of development reflects the interests of those who practice development with its goal linked to modernisation which extends the control of the Western world into LEDCs (Rapley, 2004). Post-development critically analyses what development is and what it has achieved (McKinnon, 2008). Post-development theorists argue that development defines LEDCs as undeveloped and in need of assistance. Instead of improving the conditions of the poor, development instead became an obstacle to social transformation (Robbins, 2005). Escobar (2010) describes the tension between neo-developmentalism (where the basic premises of the last fifty years of development practices are not questioned) and post-development (where these basic premises of development are challenged).

Rist (1997, p. 13) outlines an alternative and critical definition of development:

“Development consists of a set of practices, sometimes appearing to conflict with one another, which require – for the reproduction of society – the general transformation and destruction of the natural environment and of social relations. Its aim is to increase the production of commodities (goods and services) geared, by way of exchange, to affect demand.”

The word post-development was used for the first time at an international conference in Geneva in 1991 (Escobar, 2006). The focus of post-development is on the motives and premises of development and unlike other critical viewpoints, it totally rejects the notion of development (Pieterse, 2001). Escobar (2010) outlines the unease that exists between
the two opposing viewpoints of neo-developmentalism, which he defines as developmental practices that do not question the basic assertions of development theory of the last several decades, and post-development, described as a way to allow these premises to be challenged. Post-development theorists suggest that: “Development is rejected not merely on account of its results but because of its intentions, its worldview and mindset” (Pieterse, 2001, p. 175). Brigg (2002) discusses the notion that some post-development theorists hold that decolonisation led the way to the promotion of benefits and welfare to the former colonies (now LEDCs) by the West as a different way to exert power over the decolonising countries and that development is a form of colonisation. Brigg (2002) refers to several of these theorists such as Esteva (1992), Sachs (1992), Latouche (1996), Alvares (1992), Escobar (1995) and Rahnema (1992) but argues that these claims of the link between colonisation and development are substantially weakened by the fact that development is focused on the ambitions and interests of the LEDCs unlike the process of colonisation and that this distinction tends to be ignored by these theorists. Slater however states:

“the power over other societies is not only a phenomenon connected to violent incursions, military invasions, colonial conquests and externally administered governance; it also expresses a relation of knowledge that posits a Western superiority over the non-West” (Slater, 1995, p. 32).

Post-development theorists put forward the argument that development incorporates economies that were previously informal into networks of commodity circulation which does not necessarily equate to improvements in living standards. For instance, the gains from producing food for the market versus for oneself may be insignificant yet, since money is generated from the former, it now registers as improvements in living standards by the development agenda (Rapley, 2004). Shiva states:

“Culturally perceived poverty need not be real material poverty: subsistence economies which serve basic needs through self-provisioning are not poor in the sense of being deprived. Yet the ideology of development declares them so because they don’t participate overwhelmingly in the market economy, and do not consume commodities provided for and distributed through the market...” (Shiva cited in Pieterse, 2001, p. 111).
Sachs (1992, p. 1) declares development to be “a ruin in the intellectual landscape; a lighthouse which supposedly inspired nations, but which now shows cracks and is starting to crumble.” Statements such as this, reflect the disillusionment with development felt by several scholars collectively referred to as ‘post-development theorists.’ The ‘post-development school’ is discussed through three seminal works. *The Development Dictionary* (Sachs (Ed), 1992), *Encountering Development* (Escobar, 1995) and *The Postdevelopment Reader* (Rahenma & Bawtree (Eds), 1997) (Escobar, 2000; McGregor, 2007). Post-development theorists reject all development theories and practices but do not reject the notion that it is still possible for societies to transform resulting in better lives for the population where they are able to develop within their own culturally defined desires and ethics (Matthews, 2004). While there is much criticism of development both theoretically and practically, the post-development school differs by declaring the end of development and urging for alternatives to development to emerge. However, by totally rejecting development and not outlining what alternatives could replace it, the post-development theorists are strongly criticised for not being constructive in their criticism but instead destructive (Matthews, 2004).

While much of post-development discourse only criticises without offering other options, some theorists have suggested alternatives. Escobar (2009) states that for the past few hundred years our social and economic life was organised on centralisation and hierarchy building which created systems that benefitted only a few while at the expense of the majority. In the book *Encountering Development* (1995), Escobar offers options of doing post-development that is decentralised, community-based, participatory, indigenous and autonomous (Watts, 2005). Post-development is criticised for not acknowledging the advances that have occurred in development policy which focus on participation, empowerment and decision-making that is bottom-up rather than top-down (McGregor, 2007).

**2.5.1 Origin of post-development theory**

During the 1980s in many parts of the world a growing number of critics questioned the concept of development and examined the idea that development originated in the West for the social, economic and cultural production of the Third World. Some examples of these critics are Ferguson, 1990; Apffel-Marglin and Marglin, 1990; Escobar, 1995; Rist, 1997) (Escobar, 2006). In 1992 the edited book *The Development Dictionary* made the claim that
“The last forty years can be called the age of development. This epoch is coming to an end. The time is ripe to write its obituary” (Sachs, 1992, p. 1). This raised the question that if development was no longer an appropriate approach then what would take its place? From this discussion, the post-development era began in the development field (Escobar, 1992).

To understand the emergence of post-development theory it is important to trace where it fits into the development studies field. Since WWII there have been three main theoretical orientations in regard to the discussion of development according to Escobar (2006). These are: modernisation theory in the 1950s and 1960s (in combination with theories of growth and development), dependency theory in the 1960s and 1970s (the theory that European development resulted from the deliberate underdevelopment of the non-European world) and critical perspectives to development as a cultural discussion in the second half of the 1980s and the 1990s (PDT being one such approach).

Dependency theory began when Latin American economists criticised classical and neo-classical economics being applied universally (Hartwick, 2005). In the context of development debate, McGregor (2007) describes PDT as potentially the most controversial set of ideas and refers to the ‘post’ part of post-development as the questioning of the very notion of the concept of development. It accuses the development industry of using its knowledge, languages, practices and institutions to evolve LEDCs into better developed ones where social, political, economic and cultural systems that were in existence before development are now replaced with systems that fit into development thinking (McGregor, 2007).

Post-structuralists particularly theorised the idea of a ‘post-development era where development would no longer be the principle that organised the social lives of people in LEDCs (Escobar, 1995). Others, for example Rahnema and Bawtree (1997) and Rist (1997), believed that ordinary people should be relied on to construct a more compassionate ecologically and culturally sustainable world rather than relying on ‘experts’ where grassroots movements form the way to move forward to a new era (Escobar, 2006). PDT does not want development theories to be improved but instead wants them gone altogether in order for a future of non-development to be imagined, since they believe that it is a myth that development is achievable or even desirable (McGregor, 2007). Rist (1997) believes that development will never exist since it is based on limitless growth which is an impossibility.
Pieterse (2000), explains that PDT can be distinguished from other critical viewpoints to development (such as ‘dependency theory’, ‘alternative development’ theory and ‘human development’) by it insisting that development be totally rejected, rather than being implemented or altered in better ways. This rejection has emerged from a feeling that the negative outcomes that appear to have resulted from development are inherent to development, rather than being unintended side-effects of it. Thus the problem, from the position of post-development theorists, is not that development was poorly applied and there needs to be a better way to achieve it, but that the beliefs and concepts that are central to development are troublesome, and so improved implementation is not the answer. Development did not fail because of the poor implementation of governments, institutions and people, but rather because it is “the wrong answer to [its target populations’] needs and aspirations” (Rahnema & Bawtree, 1997, p. 379). Rist (1997, p. 237) believes that “only a new paradigm can alter, not the way things are, but our way of conceiving them.” Post-development theorists even criticise the alternative development projects such as ‘sustainable development’ since they believe they are even more insidious than mainstream development strategies since they have the same content yet appear friendlier (Matthews, 2004).

2.5.2 Criticisms of post-development theory

The analysis and criticisms of development theory by post-development theorists potentially will allow for more ethical engagements with those cultures and lifestyles that are the focus of development efforts. Yet PDT does have weaknesses (Brigg, 2002). The mainstream development perspectives that are being challenged by PDT are those that assume that there is a positive relationship between human development and economic growth. However, these criticisms of development, modernisation and capitalism, have a moral responsibility to give clear and plausible alternatives that also outline costs involved, which has not been achieved by post-development as it has failed to come up with viable alternative solutions (Corbridge, 1998).

Nustad (2001) comments that even though PDT does not outline a thorough description of ‘alternatives to development’, this is no reason to discard the theory overall and that this weakness should not be the cause for its important insights and radical criticisms of development to be ignored. Yet the premise of alternatives to development is very important and there needs to be more understanding of what post-development theorists
mean when they suggest for “the abandonment of the whole epistemological and political field of post-war development” (Escobar, 1991, p. 675), as well as to deliberations as to what ‘alternatives to development’ might involve.

Escobar (2006) identified three main objections made by the critics of PDT.

1. By focussing on discussion and debate the post-development theorists have overlooked capitalism and poverty as being the real problems of development.

2. There are enormous differences in development institutions and policies and this has been ignored by presenting an overgeneralised view of development.

3. Local cultures and traditions have been romanticised while ignoring the fact the local is also placed in relationships of power.

McGregor (2007) also outlines three criticisms of PDT.

1. That post-development does not recognise the advances in development where concepts such as participation and empowerment are promoted.

2. That the perspective of post-development that perceives LEDCs as passive victims of development is flawed and incorrect.

3. That it is very unclear how to put PDT into practice and that it is also unclear what would be the practical and political ramifications of doing so.

Despite the limitations of PDT due to its apparent lack of practicality, McGregor (2007, p. 169) suggests that perhaps:

“The greatest potential for practising post-development would seem to lie not so much in destroying or discarding the architecture of development, as in utilising its power and prestige by attracting the support of those who work within it.”

McKinnon (2008) postulates that the role of post-development is to find new post-development ways of doing development. While PDT has questioned the ways development is thought about, it has not as yet had any substantial influence on the practice of development. However, this alternative thinking could be used in the field in order to pursue the goals of post-development (McGregor, 2007). In regard to foreign aid this could be achieved by local communities having control over how these projects are
implemented and the actions of those who implement them. The aid projects that operate on a micro-scale are far more likely to be able to do this and therefore be in alignment with the ideals of post-development since they can support and also recognise the perspectives of the local peoples (McGregor, 2007).

2.6 Post-conflict context

Many LEDCs have also experienced conflict in their countries and are now in the process of improving economic and social conditions in a post-conflict environment. Post-conflict economic development plans aimed at alleviating poverty and improving livelihoods (Kusago, 2005) as well as establishing long-term sustainable peace through political stabilisation and reconciliation are getting increasing attention (Tonchev, 2005). Post-conflict conditions are typified by poverty, displacement and dislocation (Richmond, 2011). Development aid programs seek to address the problems in post-conflict areas as well as making democracy a priority in these countries as a strategy for conflict resolution (Sahin, 2011) with typical characteristics of countries that are post-conflict being a breakdown in trust and hostility between groups (Lothe & Peake, 2010). The people who live in these countries are twice as likely to be malnourished, twice as likely that their children will die before age five and three times more likely that their children will not go to school, with there being a lack of data available on how to prevent conflict and recover from its effects (World Bank World Development Report, 2011a). There are many challenges for the international community working in these post-conflict countries in their efforts to stabilise and support them (Lothe & Peake, 2010).

2.7 Ethics in research

The way that is most commonly used for defining ethics is norms that identify what is acceptable or unacceptable behaviour. However, people interpret these norms in the context of their own values and life experiences (Resnik, 2015). Our views of the world, of our culture, traditions and even our self-view including our values are all socially constructed and learned and therefore able to be changed and revised (Werhane, 2008).

Edwards and Mauthner (2012) define ethics as the morality of human conduct which when specifically related to social research encompasses moral deliberation, choices made by the researchers and the accountability of the researchers while undertaking the research. In
geographical training, ethics can be applied as a guide to reflect on personal and professional behaviour and encompasses academic integrity, rigor and being fair and equitable (Boyd et al., 2008). In a university context, ethics can be viewed as a representation of rules and procedures while morals can involve judgements made by individuals about issues, and a determination on how to act when conducting research is determined by both the ethics and morals combined. Therefore, getting ethical approval to undertake research does not mean that ethical considerations end there as ethics is integral to every part of the research process (Boyd et al., 2008).

Resnik (2015) outlines various reasons why it is preferable for researchers to follow ethical norms. It advances the aims of research (truth, knowledge and avoiding errors) and the values of collaboration (mutual respect, being fair, trust, accountability), it helps to promote public support for research (trust in integrity and quality) and it aids in the promotion of values such as human rights and social responsibility. It also reminds the researchers from developed countries who are collaborating with researchers from developing countries that they need to reflect on their own attitudes and the effects of doing research in countries with very different environments and ways of thinking (Benatar, 2002). Frequently, western scientists when doing research in these countries will ignore the local traditions and values which can be detrimental to any policy decisions made as well as the research as a whole (Colvin, 1993).

Applying ethical guidelines that have been developed in order to do collaborative research in LEDCs has been shown to be often impractical as well as contentious. In addition any guidelines that have been developed in order to do research ethically in these developing countries has been in the field of medical research with their being minimal advice for those doing collaborative social science research (Morris, 2015). When doing research in LEDCs it is important to acknowledge that these countries can differ significantly from our own and from each other in relation to many factors such as history, culture, attitudes to human rights to give just a few examples of which there would be many, and these differences can be very relevant to the research process (Calman, 2002).

When undertaking social research there is widespread debate on the ethical basis of the decisions being made such as being committed to the rights of the participants in the research and being respectful of the participants, being respectful of social science as a discipline and how to protect the researcher (Wiles, Charles, Crow & Heath, 2010). Hall
(2014) discusses the ethical issues for PhD students who do their research in a different culture with indigenous participants and emphasises that the researcher needs to be very aware of the impact research has had on the indigenous people in the past and to make sure the research is intentionally decolonising. Smith (1999, p. 120) proposes that when doing research within an indigenous setting the researcher should be respectful to people, engage with people face to face, look and listen before you speak, share and be generous in your engagements with people, be cautious and not draw attention to your knowledge (Smith cited in Hall, 2014).

Corbridge (1998) sees the future of development ethics as not burying the old mainstream ideas in order to make way for the new competing claims of those such as the post-development theorists but instead foster development ethics that are open and expanding. This development ethics is mindful of the needs and rights of those people who belong to the LEDCs but also is aware of the need to have plausible policies in order for these needs and rights and other development aspirations to transpire.

2.8 Empowerment theory

The idea of empowerment is founded on the “social action” ideology of the 1960s and then evolved into the self-help ideas of the 1970s (Kieffer, 1984). It has continued to evolve into a construct that is seen as being vital to the understanding of the development of individuals, organisations and communities (Perkins & Zimmerman, 1995).

The concepts of power and powerlessness need to be understood in order to comprehend empowerment (Lord & Hutchison, 1993). The Cornell Empowerment Group define power as “the capacity of some persons and organisations to produce intended, foreseen and unforeseen effects on others” (Cornell Empowerment Group, cited in Lord & Hutchison, 1993). Powerlessness, can be explained as the continuous interaction of a person with their environment where there is a feeling of distrust, an attitude of self-blame, separation from resources, an experience of deprivation and economic vulnerability, and feeling hopeless socially and politically (Kieffer, 1984).

Empowerment, in contrast, is understood as actions that are taken that result in individuals achieving increasing control of different facets of their lives and actions that result in those individuals participating in the community with dignity (Lord & Hutchison, 1993).
Empowerment is a process where influence is gained over events and outcomes of importance (Fawcett et al., 1995). Empowerment connects the well-being of individuals with the political and social context and urges thinking in a way where the focus is on competence instead of deficits, health instead of illness and strengths instead of weaknesses (Perkins & Zimmerman, 1995). Empowerment implies that many competencies are possible or already existing and that new competencies are learned by living life and experiencing rather than being told what to do by experts (Rappaport, 1984).

Working with others to achieve goals, and to gain access to resources, as well as having some understanding of socio-political factors in an environment are basic to empowerment (Perkins & Zimmerman, 1995). Empowerment is a term which is extremely connected to the local level and community (Cornwall & Brock, 2005). According to Kieffer (1984, p. 9) empowerment is a lengthy process of adult learning and development which involves the building of a “multi-dimensional participatory competence.”

There are three empowerment levels: individual, organisational and community (Perkins & Zimmerman, 1995). In order to clearly define empowerment theory, it is essential to distinguish between the empowering processes and outcomes, which therefore proposes that the actions undertaken in the process result in an outcome of empowerment (Ruechakul et al., 2015). An empowering process for individuals could be participating in community organisations; for an organisation, is collective decision-making; and at a community level an example is accessing government resources. Examples of outcomes that are a result of the process of empowerment are at an individual level, a perceived control of a specific situation; at an organisational level, the expansion of organisational networks (Ruechakul et al., 2015) and greater participation by members and improvements in the achievement of goals for the organisation (Perkins & Zimmerman, 1995); and at a community level, accessible community resources (Ruechakul et al., 2015).

Central to community development is community empowerment (Laverack, 2001). Communities consist of people who may or may not be spatially associated but who share common identities, interests and problems. Empowerment is a process that is focussed in the local community and includes mutual respect, caring, critical reflection and group participation (Ruechakul et al., 2015). A definition of community empowerment is a social
undertaking that promotes participation to achieve community control, improvements in quality of life, social justice and political effectiveness (Flynn, Ray & Rider, 1994).

Community empowerment assists in the development of individuals and organisations in order for them to recognise their decision-making abilities, their resource and knowledge acquisition skills, their problem solving skills and their community resources (Ruechakul et al., 2015). It affects improvements in the quality of life of the individuals resulting from group action and to connectivity of the organisations within the community (Perkins & Zimmerman, 1995). In order for community empowerment to develop there must be participation whether in small groups or in larger organisations (Laverack, 2001). By enhancing the skills of individuals and groups through action research, community empowerment can be achieved (Flynn et al., 1994). The application of empowerment in research, allows for opportunities for participants to expand their skills and knowledge and for professionals to work with participants in a collaborative rather than authoritative manner (Perkins & Zimmerman, 1995).

2.9 Participatory research in less economically developed countries

Action research can be used as a way to foster a cyclical process that creates improvements through a variety of ways which include describing the problem, getting information from previous researchers, the collection of data, designing and applying strategies for change, assessing the results and then planning the next cycle of improvements. The use of action research is widely accepted as a research approach (Hagevik, Aydeniz & Rowell, 2012). The use of action research in teaching for example is a way at improving and understanding practice, and also the improvement of the conditions in which the practice occurs (Carr & Kemmis cited in Hagevik et al., 2012). Flynn et al. (1994), consider action research as absolutely necessary in order for the process of community empowerment to be successful with both the researcher and the members of the community growing in their knowledge of the situation.

Participatory approaches to research include participatory community based research, participatory action research and empowerment research, with each approach just having a slightly different emphasis. These participatory research approaches, are all concerned with the sharing of responsibility, power, decision-making and benefits and are very
valuable to the empowerment of rural communities (Morford, Robinson, Mazzoni, Corbett & Schaiberger, 2004). Participatory approaches are:

“As much a philosophy as a method, the aim of participatory research is not only to collect and analyse data to solve problems and generate knowledge, but to increase research capacity, empower participants in other aspects of their lives, and enhance community cohesion” (Morford et al., 2004, p. 40).

Ruechakul et al. (2015), discuss the use of participatory action research (PAR) for empowerment where the process involves, creating awareness, specifying the problems, taking action and reflection. This technique allowed for the community to be a part of all stages of the research through the development of programs, participating in workshops and evaluating the results.

Researchers working in cross-cultural settings are increasingly using PAR as a method to improve participant’s lives through the use of their knowledge to find solutions to problems that are relevant (Westby & Hwa-Froelich, 2003). When conducting cross-cultural PAR, the most basic requirement is mutual respect for each participant’s knowledge. The central requirements for community engagement include trust between participants, effective communication of the science and equitable decision-making (Moller et al., 2009). Westby and Hwa-Froelich (2003), emphasise the need for researchers and consultants working in a cross-cultural setting while using PAR, to understand the cultural issues. They provide some guidance on how to start and maintain PAR in this type of setting.

Cultural sensitivity/Awareness. One example is adapting research approaches to match the cultural values. Concepts of time is another area that requires cultural sensitivity with some cultures starting and ending activities based on clock time and others that do not follow timetables.

Collaborative relationships based on trust. This can be established by learning about cultural beliefs and practices. Learning the native language is another way to form collaborative relationships, although Westby and Hwa-Froelich (2003) put a cautionary comment here as in some instances the language can be tied to religious beliefs and is not to be learned by outsiders. The context of communication is also important, for instance
the sharing of food may be very important to the undertaking of meaningful discussions. Developing a good relationship takes time and needs patience and flexibility.

**Cultural Protocols.** In some cultures there are hierarchies where only some people can speak on behalf of others. Development projects sending consultants need to be aware of such protocols as a consultant may not be perceived as having the necessary authority and the project can fail as a result. The selection of an appropriate interpreter who has knowledge of the culture as well as the area of study is very important.

**Interpersonal Skills of Consultants/Researchers.** Some of the interpersonal skills needed are having empathy, being open to information being conveyed without putting their own construct of reality onto the meaning and being flexible in order to review their assumptions.

Participatory approaches encourage collaborative research by identifying the priorities of the research as well as initiating PAR where those who are affected by the research are actively involved in identifying issues, collecting and analysing data, with these responsibilities being shared with community members and the scientists throughout the research phases, unlike traditional research where the researchers are in control of these aspects of the research. Results of the research are then used to benefit the individuals or communities involved (Angeles, 2005; Morford et al., 2004).

There are differing views even among supporters of participatory approaches, as to when and to what extent participation is appropriate, who it is appropriate for and what type of participation should be utilised. There is also conjecture that there are political reasons and hidden agendas behind the concept of participatory development approaches (McGee, 2002). Cornwall & Brock (2005) criticise participatory approaches, and argue that these approaches which were the focus of development in the 1970s were not about shifting power relations, but rather about sharing the costs and burdens of development. They contend that in today’s development era, participation and empowerment rather than representing the aims of giving the poor ‘a voice and choice’, legitimise the current development agendas under the poverty reduction policy which is utilised to show the development agencies as “guardians of rightness and champions of progress.” McGee (2002) believes mainstream development can be transformed by finding out what projects the people who are being ‘developed’ want rather than letting them participate in the development projects undertaken by academics, NGOs and agencies for example. Mohan
(2006), comments that participatory approaches could be transformational, if they did not just study at the local level but included transnational corporations including the main development agencies and the global economy in their study and were prepared to be critical of their practices.

2.9.1 Role of interpreters and translators

In cross-cultural research, interpreters are crucial to the research process, yet their role and their effect on the results of the research is not typically outlined in studies (Shimpuku & Norr, 2012). The interpreters can have a profound impact on the research and in order for the research to be useful, it is important for the English speaking researchers to discuss with the interpreters and translators about their own perspectives on the issues the research is investigating since language integrates beliefs and values, and social, cultural and political meanings (Temple & Edwards, 2002).

Simon explains the difficulties for translators:

“The solutions to many of the translator’s dilemmas are not to be found in dictionaries, but rather in an understanding of the way language is tied to local realities, to literary forms and to changing identities. Translators must constantly make decisions about the cultural meanings which language carries, and evaluate the degree to which the two different worlds they inhibit are “the same.”... In fact the process of meaning transfer has less to do with finding the cultural inscription of a term than in reconstructing its value” (Simon cited in Temple & Edwards, 2002, p. 3).

2.9.2 Capacity building

The term ‘capacity building’ was used from the early 1990s (Craig, 2007) with its origin being in community development (Simmons, Reynolds & Swinburn, 2011). Capacity building as a concept has many varied meanings and definitions (Simmons et al., 2011) with Kaplan (2000) observing that although it is one of the most common development concepts, there is no shared definition of what it actually means practically. The World Bank defines capacity building as “the process of strengthening the abilities or capacities of individuals, organizations and societies to make affective and efficient use of resources, in order to achieve their own goals on a sustainable basis” (World Bank, 2016a).
McLean, Ebbesen, Green, Reeder, Butler-Jones & Steel (2001) in relation to health promotion, define capacity as skills, knowledge, commitments and resources that are needed by individuals and organisations to be able to plan, implement and evaluate activities.

Capacity building assists individuals and societies to have control over their own destinies through the gaining of skills, knowledge and viewpoints that will enable them to increase their incomes and improve their situations. Through capacity building people learn to solve their own problems, become self-reliant and gain self-confidence (Goff, 2006). In order to build capacity to achieve joint objectives, effective partnerships must first be established (Simmons et al., 2011).

Community capacity building is the development of aspects that will allow a community to define, evaluate and take action on issues that they regard as important (Liberato, Brimblecombe, Ritchie, Ferguson & Coveney, 2011). A review of the literature on capacity building by Liberato et al. (2011) determined that the following nine areas were used in gauging community capacity building: leadership, mobilisation of resources, skills development and opportunities to learn, partnership/linkages/networking, an assets based approach, participatory decision-making, communication, development pathway and sense of community.

Craig (2007) however, outlines several criticisms of community capacity building including that the term is used by organisations such as national governments and the World Bank to actually describe interventions that are ‘top-down’ where local communities are obliged to become involved in programs that already have the goals predetermined in order to receive funding. He goes on to comment on the need for governments to promote their own political and social agendas. He quotes the Federation of Community Development Learning in the UK:

“... the experience of many communities is that ‘community capacity building programmes (with a myriad of titles), have been imposed on them; with perceived needs, desired outcomes and preferred method part of the package which they have not had the opportunity to identify, develop or agree ... the ‘community’ (often not self-defined) is exhorted to play its part in an environment where inequalities of resources, power, information and status are not even acknowledged, never mind addressed’” (FCDL cited in Craig, 2007, p. 351).
Tedmanson, based on a study of community capacity building projects working with Indigenous Australians commented that:

“This new capacity-building jargon signifies an entrenchment of notions of what constitutes capacity, who defines capacity and what constitutes the relationship between the dominant culture capacity-builders and those identified as capacity deficient ... The term community capacity building will have little ... meaning to ... the Anungu peoples of Central Australia where concepts such as Yerra ... are cited as encompassing reciprocity and community obligation. Supporting, helping, sharing, giving of time and resources, cultural affirmation and taking care of country are responsibilities not viewed as special individualised effort but as cultural competencies ... discussions of community capacity-building in indigenous contexts must avoid the paternalistic construction of a ‘deficit’ in the Aboriginal domain” (Tedmanson cited in Craig, 2007, p. 351).

Tedmanson then goes on to quote an Aboriginal person’s response to the notion of capacity building:

“To restore capacity in our people is to be responsible for our own future. Notice that I talk of restoring rather than building capacity in our people ... we had 40 to 60 000 years of survival and capacity. The problem is that our capacity has been eroded and diminished [by White colonialists] – our people do have skills, knowledge and experience ... we are quite capable of looking after our own children and fighting for our future” (Tedmanson cited in Craig, 2007, p. 351).

2.10 Summary

Chapter Two reviewed challenges and problems with poverty and development and introduced development theories, with a particular focus on post-development theory. The concepts raised in post-development theory to move beyond development to alternatives that allow for more ethical engagement, promotes community based and participatory approaches that reject traditional development practices towards those that are more empowering. Empowerment theory and participatory action research were discussed and have assisted in the development and reflection of the presented research which will be explained in more detail in subsequent chapters. The following chapter provides
background and development history on Timor-Leste to provide the context for the participatory action research cycles discussed in this thesis.
Chapter Three: Timor-Leste context

3.1 Overview

Chapter Two described the role of development and surrounding development theories predominantly in relation to less economically developed countries (LEDCs). A focus on post-development theory (PDT) was presented which challenges the approach of development and the theory of empowerment was also introduced. Participatory action research (PAR) and capacity building was also introduced and how these relate to ethics in research and the role of the researcher. The research project, Timor-Leste Coffee and Poverty Project, discussed in this thesis uses a PAR approach and was undertaken in a recently independent, post-conflict LEDC with a history of colonialism and therefore, it is important to clearly understand the context of where this research was undertaken.

This chapter aims to understand the unique context of Timor-Leste and the role that agricultural commodities, specifically coffee, play in development on a national scale. An understanding of Timor-Leste’s history, culture and agricultural dependence provides a necessary background and context in which Timor-Leste’s challenges with development can be discussed and the way to effectively approach conducting collaborative research through PAR as an alternative to focused traditional development strategies can be explored. With its history, and current situation, it is important research is conducted collaboratively to ensure that the disempowerment, that can arise from development and research strategies, does not add to the issues a post-conflict LEDC faces.

This chapter first sets a context for Timor-Leste’s current situation by discussing its location and the history of colonisation. Demographics and infrastructure are outlined, the issues surrounding land tenure are addressed and the culture and cosmology of Timor-Leste is introduced. Agriculture and climatic conditions are discussed and the importance of coffee highlighted, with the challenges of aid and development in Timor-Leste setting the scene for the introduction of the methodology of the research project discussed in Chapter Four.
3.2 Timor-Leste context

The Democratic Republic of Timor-Leste (previously known as East Timor until its independence) is one of the world’s youngest countries, and the newest in South East Asia, gaining its independence in 2002 after being ruled by the Portuguese for 400 years, occupied by Indonesia for 24 years and under United Nations transitional administration for two years (Loch & Prueller, 2011). It is located north-west of Australia in South East Asia on the eastern half of Timor Island and includes the enclave of Oecusse and the islands of Jaco and Ataruo, while West Timor, a former Dutch colony remains a province of Indonesia (World Bank, 2009). Timor-Leste is comprised of 13 districts and has a land area of 14 609 km² (Daniel, 2008) (Figure 2).

![TIMOR-LESTE](image)

Figure 2: Timor-Leste showing the 13 districts

Timor-Leste is a country with a history of colonisation and occupation (Nagel, 2013) with the population suffering human rights abuses, civil unrest and dramatic political changes (Taylor-Leech, 2009). It is, according to Sahin (2011), a ‘post-conflict’ or ‘fragile country’. The World Development Report (2011) determined that post-conflict countries take between 15-30 years to transition out of a fragile state due to recurring and violent crises (World Bank, 2016b). The United Nations General Assembly, on 4 December 2003, endorsed a recommendation from the Economic and Social Council that Timor-Leste be added to the list of LEDCs (Fang, 2006). The island of Timor was partitioned between two
colonial powers. The Dutch in the West from the mid 1600s (now part of the Republic of Indonesia) and the Portuguese in the East from the sixteenth century until 1975 (now independent Timor-Leste) (Government of Timor-Leste, 2017), dividing the people of Timor Island, including families between competing administrations (Kammen, 2010).

It was the extensive sandlewood forests that drew the Portuguese to Timor-Leste in the 16th century (da Costa, 2003). The Portuguese colonised Timor-Leste for over 400 years yet did not exert political control into the interior of the island until the start of the 20th century. During the Dutch rule, maize was introduced as the staple food crop, sandlewood was exploited until its near extinction and plantations of coffee and coconuts were established (Neupert & Lopes, 2006). During World War Two (WWII), Japan invaded Timor-Leste resulting in a guerrilla war against the Japanese by both Allied troops and some Timorese. After the war Portugal again took control of the country. In 1974, due to a change of government in Portugal, the process of decolonisation started, but due to problems decolonising Mozambique and Angola, Timor-Leste was deserted by Portugal, which declared its independence on November 28, 1975, and nine days later, before any international recognition of Timor-Leste’s declaration of independence, Indonesia invaded (Neupert & Lopes, 2006). The following year Indonesia officially integrated Timor-Leste as its 27th province and during the next 24 years the occupation was often violent, with records from the government of Timor-Leste indicating that there were over 60 000 deaths in the early part of the Indonesian occupation with a total of around 200 000 during the entire period (Grenfell, 2006) with an estimated 84 200 deaths out of this total due to illness and hunger (Silva & Ball, 2006).

During this period of Indonesian occupation, a substantial development policy was applied in the province, precipitating economic progress with average economic growth of 6% per year from 1983-1997 (Government of the Democratic Republic of Timor-Leste, 2004). Little infrastructure was built prior to the Indonesian occupation. Roads, health centres and schools were then built, irrigation was used and a civil service was established with a goal to make the country less dependent on agriculture (Friday, McArthur & Watson, 2006; Neupert & Lopes, 2006).

It appeared that the Indonesian occupation of Timor-Leste would be unsustainable during the 1990s, due to international and regional pressure. Habibie, the President of Indonesia, in January 1999, in the circumstances of the Asian economic crisis, announced a
referendum for the people of Timor-Leste to decide between continuing as part of Indonesia or to become independent with 78.5% choosing independence (Grenfell, 2006; Lothe & Peake, 2010). The Indonesian Government agreed to this referendum over the objections of the Indonesian military and the UN organised the vote for independence (Fitzpatrick & Barnes, 2010).

The outcome of the referendum resulted in violence and destruction by Indonesia backed militia groups, with more than a thousand killed, 75% of the population displaced, and around 70% of all infrastructure destroyed (World Bank, 2009). Most Indonesians fled the country leading to a severe shortage of administrators, tradesmen and professionals, leaving only 23 doctors, 2 power engineers, 20% of Timor-Leste’s high school teachers and no pharmacist (Daniel, 2008; World Bank, 2005a). A multinational peacekeeping force was sent to Timor-Leste to restore law and order and then a United Nations Transitional Administration was established (Neupert & Lopes, 2006). On 30 August 2001 the first democratic election occurred with Timor-Leste gaining its independence on 20 May 2002 (Turner, 2008).

It is common for post-conflict countries to experience recurrent periods of community instability and violence (Brooks, Silove, Steel, Steel & Rees, 2011). This was the case in Timor-Leste where the early years of independence were often unstable and violent, leading to a political crisis in 2006 (Decent Work Country Program [DWCP], 2015). A political and security emergency occurred with tensions from old and new conflicts escalating between different groups including the newly trained security forces, veteran’s groups and political parties, leaving thirty-eight dead, many hurt, 150 000 people internally displaced, thousands of houses destroyed and bringing the country to the brink of civil war (Loch & Prueller, 2011; Lothe & Peake, 2010). The government called for international assistance, and the UN Security Council approved intervention with Australian and New Zealand defence forces arriving in May 2006 who were assisted by police from Australia, New Zealand, Malaysia and Portugal. This became the United Nations Integrated Mission in Timor-Leste (UNMIT), and was the fifth United Nations (UN) operation in Timor-Leste since 1999 (Lothe & Peake, 2010). This period of instability continued during 2006 -2008 and culminated in the shooting of President Ramos-Horta on 11 February, 2008 (Nagel, 2013). While the peace keeping initiative UNMIT was completed in 2012, (DWCP, 2015),
the socio-political dynamics, which provoked this crisis has arguably “been marginalised rather than adequately resolved” (Arnold, 2011, p. 220).

### 3.3 Demographics

#### 3.3.1 Population

In 2015, the third census undertaken in Timor-Leste since independence, showed a population of 1,183,643 with around 70% living in rural areas (Statistics Timor-Leste, 2016). In 2013 nearly half of the people were under the age of 15 making for a very young population (World Health Organisation [WHO], 2016). The population growth rate has recently decreased, being 15.51% between the years 2004-2010, but reducing to 9.46% between 2010-2015 (Government of Timor-Leste, 2016). The fertility rate also appears to be slowly declining. In 2005 it was seven children per woman, which was nearly the highest in the world (World Bank, 2008). The latest data (2012) measuring the fertility rate puts it at six children per woman (WHO, 2016). It was speculated that the population boom that occurred after 1999 would be short-lived based on research that demonstrates a link between conflict and fertility rates, for example, the WWII baby-boom (Drysdale, 2007). This rate is still very high and high population growth puts heavy demands on social services like education and health (Drysdale, 2007).

Maternal mortality is also high, as is infant mortality, which is the highest in South East Asia, at three times the regional average (World Bank, 2008). However, there have been significant improvements when the most recent data is compared to the baseline data from 1990. Timor-Leste achieved the internationally agreed objective under the Millennium Development Goals (MDGs) of lowering infant and child mortality (DWCP, 2015). For the under-five mortality rate (per 1000 live births) in 1990 it was 172; as of 2012 it is 55. Likewise maternal mortality has also shown dramatic improvement since 1990 where it was 1200 (per 100,000 live births) to a reduction of 270 as of 2012 (WHO, 2016).

#### 3.3.2 Religion

The majority of the Timor-Leste population is Catholic. While Timor-Leste has been considered Catholic since the colonial Portuguese period, during that time the people were mainly Animist with some Catholic rituals incorporated into their beliefs. However, during the Indonesian occupation the number of Catholics greatly increased due to a number of
reasons including that Indonesia was mainly Muslim, only five official religions were
recognised, excluding traditional ones, and the Catholic church became a place of refuge
during this oppressive period (East Timor Government, 2012). Now most of the population
considers themselves as Catholic (over 97%), with small numbers of Protestants, Muslims,
Buddhists and Hindus; only 918 people identified as Animists out of the total population
(Statistics Timor-Leste, 2014). However, when José Ramos-Horta was sworn in as Prime
Minister in 2006, he did comment that the Timorese have a “symbiotic relationship of
Timorese animist and Christian beliefs” (East Timor and Indonesia Action Network,
2006), so while there are few Timorese who identify first as Animist, Animism is a large
part of the religious beliefs of many Timorese who incorporate it into the religion with
which they choose to identify.

3.3.3 Language
There are more than 30 languages or dialects used, with the major local ones being Tetum,
Macassae and Mambai where each is spoken by more than 10% of the population with
Tetum being understood by about 80% (World Bank, 2005b). Portuguese, the official
language of the Government, and Tetum, are the official languages (Drysdale, 2007).
English and Bahasa Indonesia are designated working languages (Taylor-Leech, 2009).
Timor-Leste has an adult literacy rate of 58% (United Nations Children’s Fund [UNICEF],
2013) with the most recent literacy rates for people aged between 15-24 showing a
significant increase in the level of literacy in the official languages, while Bahasa
Indonesian has decreased and Portuguese and English literacy doubled (Statistics Timor-
Leste, 2014). The decision to make Portuguese an official language has caused issues of
alienation for those who were educated during the occupation of Indonesia and therefore
mainly speak Indonesian (Drysdale, 2007).

3.3.4 Economics and poverty
Timor-Leste is made up of three regions: Eastern, Central, and Western, and is comprised
of 13 districts. There is a great deal of difference between these areas in relation to social
and economic factors with rural areas in West and Central areas being poorer than the rural
areas of the East (World Bank, 2005c). The upper poverty level for Timor-Leste is about
$27 a month with the extreme poverty line set at about $22 a month with about a third of
the population below the lower line (World Bank, 2009). Around 41% of the population
lives below the basic needs poverty line with an estimated 58% of communities living in poor housing with most of these having no access to clean water or sanitation (Wallis & Thu, 2013). The latest census of 2015 did show that there was some slight improvement in access to safe drinking water and sanitation for rural households (Statistics Timor-Leste, 2014).

The General Directorate of Statistics (DGE) recently completed the 2014-2015 Timor-Leste Survey of Living Standards, which showed a significant reduction in poverty over the last decade. Based on the national poverty line, the survey found that the proportion of people living in poverty had dropped from 50% in 2007 to 41.8% in 2014. This estimate is not directly comparable with the international poverty line as it is measuring local conditions (Statistics Timor-Leste, 2014). In 2015, Timor-Leste ranked 133 out of 188 countries on the Human Development Index (HDI), a composite measurement of life expectancy, education and a decent standard of living. This measurement was designed to assess the development of a country not only on economic growth but on the development of its people and their potential (United Nations Development Program [UNDP], 2016b). A country’s development cannot rely only on its economic and natural resources but also on a healthy, skilled and productive people (DWCP, 2015).

### 3.3.5 Agriculture

Agriculture is the main source of cash in Timor-Leste with 80% of households involved in agricultural production and 87% raising livestock (Statistics Timor-Leste, 2014). More than 41% of the population who are employed work in agriculture (DWCP, 2015). Subsistence agriculture is prominent with most of the people involved experiencing poverty with a low standard of living (Henriques, Narcisco & Branco, 2011). Land is crucial to a population where most rely on subsistence agriculture. In Timor-Leste most people have small land holdings with around 24% being less than 0.5 ha and a further 60% between 0.5 and 1.5 ha (World Bank, 2005c).

### 3.4 Infrastructure

After the 1999 referendum, pro-Indonesian militia mounted widespread violence, causing destruction to about 70% of the infrastructure of Timor-Leste with development being set back by many years if not decades (Lothe & Peake, 2010). Buildings, installations and
equipment were destroyed including private homes, public buildings, schools, health centres, bridges and much of the communication and energy infrastructure. Government files such as those containing land and property titles, education and civil records were burned (World Bank, 2005a), jobs, funding and administration structure were lost and most of the higher level civil servants, being Indonesian, left the country (Friday et al., 2006).

The government of Timor-Leste receives revenue from oil and gas in the Timor Sea and set up ‘The Petroleum Fund’ in 2005, with its model being based on Norway’s Petroleum Fund with the 2006-2007 budget receiving over US$12 billion in petroleum revenue (Drysdale, 2007) which has allowed for development projects to be undertaken, with most of the funds allocated for development being spent on infrastructure as this is considered essential for economic development (Wallis & Thu, 2013). The basic health infrastructure has been re-established (including the hospital in Dili, four of the five regional hospitals and the building of many health centres) with more people now accessing these services which has led to significant improvements in health outcomes such as infant and child mortality which has halved since 1999 (World Bank, 2016b).

During the occupation by Indonesia, the roads of Timor-Leste were improved significantly with paved roads increasing from zero to around 4500kms (Oxfam Australia, 2004). The total length of roads in Timor-Leste today is 6036kms, half of them being rural roads and only 8% in good condition. The roads are difficult to maintain due to their age and the damage caused by powerful rains (Government of Timor-Leste, 2010) and are potholed or rutted and needing the use of a 4WD to access most areas. However many people do not have access to the use of vehicles, making access to markets, schools and health centres difficult (Nagel, 2013).

One of the World Bank’s main focuses in Timor-Leste is the road infrastructure. Together with the Government of Timor-Leste, The Road Climate Resilience Project has been set up to upgrade the main highway, doing work such as drainage management, erosion protection and emergency repairs (World Bank, 2013). Section 1 of the main road is now complete which will allow for transport on a road that is more resilient to landslides and weather events (World Bank, 2016b). This main 110km road connects the three districts of Ainaro, Dili and Aileu and is used by a third of the population and 11 000 smallholder farmers (World Bank, 2013).
Improving the road network will allow better access to markets for farmers, especially in the coffee producing areas and will make it easier for people to access health centres and schools as explained by Soares, a local truck driver:

“Accessing the market in the capital Dili during the rainy season was really difficult. Due to bad roads caused by landslides and flooding, people lack access to basic services. This year, the road condition improved in some very important parts, such as Aitutu village, which is washed out by rain almost every year” (World Bank, 2013).

This road is vital for transporting agricultural produce including coffee and poor roads affect farmers getting a good price for their coffee (World Bank, 2013).

“If we can manage to bring our coffee directly to companies in Dili, we can get a better price compared to waiting for companies that come to buy from us. However the transport cost is still a major challenge due to the road condition”, said Mario Araujo, a coffee farmer in Ainaro district. “One day if the road is fixed, there will be more cars operating and the price of travel will be lower” (World Bank, 2013).

Another initiative is to improve the rural roads in Timor-Leste and is called The Roads for Development Program (R4D) maintained through an Australian Aid Project, which ran from March 2012-February 2016 with an aim to improve road access to rural communities. This project was expected to repair 450kms of rural roads, construct 40km of new roads and maintain 1850kms of rural roads (International Labour Organisation [ILO], 2017). The Australian contribution to this project was AUD$30 000 000 with the government of Timor-Leste committing US$20 600 000. The International Labour Organisation (ILO) implemented this program with its managerial and technical assistance and the R4D program was not only focussed on rehabilitating and maintaining rural roads but also on capacity building. Due to the R4D program, some roads that were impassable during the wet season are now rehabilitated allowing easier access to markets and lower transportation costs. However, there have been problems with this project progressing in a satisfactory manner due to the government of Timor-Leste removing funding marked for the R4D program and instead allocating it for urban roads as well as delaying payments set aside for R4D. A mid-term evaluation report of R4D in October 2014 determined that R4D had made good progress and shown what a good rural road network could look like, but had substantial sustainability risks due to limited capacity in the Ministry of Public works
and other sections of the government, and due to budgets being allocated for emergency works rather than maintenance (Roads for Development (R4D) Mid-Term Evaluation Report-October, 2014).

While Timor-Leste has ongoing development programs to address infrastructure and lack of services in rural areas these programs continue to work very slowly. Basic infrastructure is still sparse such as water supply, communications and tarred roads. The Government’s infrastructure fund through the Millennium Development Goals Suco program is addressing these issues with the provision of roads, houses, solar power, water and sanitation (Batterbury et al., 2015).

The Millennium Development Goals Suco program is a good example of the difficulties of implementing development projects in Timor-Leste. A US$87 million contract was awarded to an Indonesian company to import around 9000 prefabricated houses, which would have solar energy, water and sanitation and would be built in existing ‘Aldeia’ (villages) for vulnerable community members. However, materials were imported, local employment and businesses were not supported, the communities themselves did not sufficiently participate in the execution of the project and the houses may not be either environmentally or culturally suitable. Many of them are vacant and slowly decaying while some that are occupied are having issues with water supply with houses not connected to clean water sources and toilets being not able to be used. The houses are also designed so that sewage runs out into open drains posing a health hazard (Wallis & Thu, 2013).

### 3.5 Land tenure

All post-conflict countries face land tenure difficulties due to people being displaced in times of crisis (Wright, 2012). Timor-Leste has experienced continuous waves of internal displacement with first Portuguese colonisation, Japanese occupation during WWII, then the Indonesian occupation, which caused most of the population to be forced from their land in both 1975 and 1999 (Fitzpatrick, 2001). The violence that followed the 1999 referendum resulted in 300,000 people fleeing or being forced into West Timor and around 450,000 people being displaced within Timor-Leste (Fitzpatrick, 2001). As a result of these events, land tenure is very complex, with the added difficulty of traditional land rights not being officially accepted and the destruction of 70% of the land records by pro-Indonesia militia after the referendum (World Bank, 2009). The existence of both pre-1975
Portuguese, and Indonesian titles, plus traditional claims make for a very difficult situation in deciding land ownership (McWilliam, 2007). This situation has resulted in land and property disputes, socio-political conflict and the unofficial use and occupation of land (Thu, 2012). Even the unrest that occurred in 2006 was in part intensified by underlying issues of property title and land ownership (Fitzpatrick, 2002). There are three land reform challenges in Timor-Leste: urban land that needs zoning and clear property rights, farm land that is presently under customary rights and government land to be used for public and private investment (Ministry of Agriculture and Fisheries [MAF], 2012).

The government of Timor-Leste has sought to formalise land rights in order to resolve disputes, give landholders greater control over their land and to enable land to be used for investment (Thu, 2012). However, there is still no functional law that identifies private ownership of land in Timor-Leste with many people using customary rights to land, particularly in rural areas (Fitzpatrick & Barnes, 2010). A draft transitional land law was issued in late 2009 allowing for ownership of land if the claimant had a statutory ownership title under either Portuguese or Indonesian rule or had been in peaceful possession of land since December 31, 1998. “Existing customary rights of land possession and use” were also protected under this transitional land law as long as they were not inconsistent with the Constitution and current law (Fitzpatrick & Barnes, 2010).

Access to land is essential for livelihoods in the rural areas of Timor-Leste where around 97% of rural land is under traditional tenure, which is land that has almost never been titled (World Bank, 2011b). Around one third of the population relies on subsistence farming and while in urban areas there is growing competition for land, there appears to be enough land for growing crops in most of the rural districts with problems arising through disputes over who has authority over land (Fitzpatrick & Barnes, 2010). Permanently cropped land such as house gardens, was considered individual property (Ministry of Agriculture, Forestry and Fisheries [MAFF], 2002) but traditional authority regulated who owns and uses most land with it managed through kinship and through the authority of patriarchs of a certain clan or lineage with access being considered the most basic need for a sustainable existence (Meares cited in Leach, Mendes, da Silva, da Costa & Boughton, 2010). Despite the historical upheavals, these customary land systems have shown to be highly resilient and adaptive (Fitzpatrick & Barnes, 2010).
By creating land titles, the local access to land could change and allow for exclusion (Thu, 2012). Recognising customary practices of land tenure is essential, with laws that privatise land and allow the government to claim land leaving limited areas of ‘community land’ (which is the current situation with draft land laws) not being needed. For many Timorese, land is their spiritual core and is considered sacred (Henriques et al., 2011). Local traditions and customs have worked well for communities for hundreds of years allowing for fair access to land, yet foreign consultants and people in positions of power resist acknowledgment of these customary and communal land management systems (Batterbury et al., 2015). Farmers need to have evidence of tenure in order to get bank loans for agriculture, and commercial agricultural development is hampered by lack of clarity over tenure (MAF, 2012).

The aid agencies of The World Bank, AusAID and USAID have wanted commercialisation of land in Timor-Leste and would like foreign corporations to own land (Anderson, 2008). The Constitution of Timor-Leste says that “only national citizens have the right to ownership of land” (section 54) yet presently prime agricultural land is being leased long term to foreign corporations. Despite food insecurity in Timor-Leste, the Minister for Agriculture in Timor-Leste Mariano Sabino in early 2008 handed over 100,000 hectares of agricultural land to GT Leste Biotech, based in Indonesia, for a sugar-cane plantation, and an Australian biofuel company (Environenery Developments Australia) was given a lease of 59 hectares by Secretary of State Avelinho da Silva (Anderson, 2008).

Dr Tim Anderson, senior lecturer in Political Economy at the University of Sydney 2008 states; “No sensible person should seriously link land privatisation and large monoculture cash crops to ‘agricultural sustainability and food security’, but that is now happening in Timor-Leste. ” By choosing to develop land reform through the use of ‘strong titles’, registration of land and foreign investment, and sidelining traditional structures of land management in order to develop and modernise agriculture, there is a danger of creating dispossession, monocultures and food insecurity (Anderson cited in Leach et al., 2010).

3.6 Cosmology and culture

Researchers working in, and with communities in LEDCs are often confronted with ideas and concepts that are foreign to the western epistemology. To examine the Timor-Leste Coffee and Poverty Project conducted from 2009-2013 in Timor-Leste with academic,
government and coffee grower stakeholders it is important to also examine how it fits in with both current western worldviews, and the indigenous worldview of the relevant indigenous communities. The relevance of this is discussed by Cullinan (2003) who argues that the societies that currently dominate the world, govern based on the false understanding that humans are separate from their environment, and can continue to thrive even as our environment’s health deteriorates:

“Understanding why we need to change our outlook on life and what we ought to change it to, is a big task. For many people in post-industrial societies this would involve changing their entire understanding of the universe and society, in short, their cosmology” (Cullinan, 2003, p. 54).

This concept leads Cullinan (2003) to the view that the dominant cultures of the 21st century could learn important principles and techniques from the systems and cosmology that exists with the indigenous people of the world. The worldview or cosmology of many of the world’s traditional indigenous communities deeply revolves around a balance between humans and nature. It is important to reflect and learn from these different perspectives so that those of us who are entrenched in the western worldview, through this process can hopefully achieve a new understanding on how to better achieve a balance with the environments in our own communities (Cullinan, 2003). While this section of this thesis is not designed to answer or understand these concepts in great detail it is important to reflect that research results in these communities are part of a bigger picture and results can be interpreted in a variety of ways.

Cosmology is important to explore when discussing the Timor-Leste Coffee and Poverty Project in the cultural context of Timor-Leste. Cosmology and worldview can be combined to describe the way a society interprets the links between the cosmos, Earth, and humanity and can include spirits; and common beliefs and values that a society shares about its past, present and future in order to direct and legitimise its culture (Reichel, 1999). Indigenous cultures store their worldviews in proverbs and myths, which explain how and why things are a certain way, which allows explanation, prediction and control over situations (Grim, 2001). Grim (2001), describes worldview as “a story of the world which informs all aspects of life among a people, giving subsistence practices, artistic creation, ritual play and military endeavour a significant context” (Grim, 2001, p. 230). Worldview includes patterns of thought, attitudes to life, a view of what should be, an
understanding of relationships to the order of things and a view of self and others (Grim, 2001). Culture is not something we are born with, and it determines how people think, feel and behave in a society. It encompasses religion, age, gender, socioeconomic status, location, ethnicity and language (Carjuzza & Ruff, 2010).

In his address when he was sworn in as Prime Minister in July 2006, José Ramos-Horta stated:

“Timor-Leste has a singular historical experience. Timorese people are a people deeply spiritual whose day to day lives are inspired and influenced by the spirits of the past and by supernatural beliefs that are fused with Christian beliefs. For that reason we cannot import or impose modern models of secularism or Europeanism that would disturb the symbiotic relationship of Timorese animist and Christian beliefs” (East Timor and Indonesia Action Network [ETAN], 2006).

While today over 90% of the population identify as Catholic, it seems apparent that for the East Timorese that animist beliefs remain very strong and for a few it remains their main spiritual religion (Government of the Democratic Republic of Timor-Leste, 2005). Animism encompasses the concept of lurik, which is a core value of Timorese society and continues to have special significance for the people living in the central highland areas where the Timor-Leste Coffee and Poverty Project was conducted. It includes the creator, spirits of ancestors and sacred rules that determine relationships between people and nature. It is connected to places, rivers, rocks and hilltops (Bovensiepen, 2014). There is widespread belief that a sense of belonging to a place, results from a local mystical creation process (Leach et al., 2010). Land is the spiritual core for most of the Timorese and their cosmology perceives land as being sacred (Henriques et al., 2011). Spirits such as Rai Nains (spirit owners of the land) and Bee Nains (water lords) protect the people and give them food and water with rituals and ceremonies, practiced to honour these spirits (Henriques et al., 2011).

The population is divided into 34 distinct ethno linguistic groups (Henriques et al., 2011). The largest language group is the Mambai who live in the mountains of central Timor-Leste (Fox, 1996). In the nineteenth century the Portuguese in Dili adopted a simple form of Tetum, which originally came from the central south coast; it was taken up by the Catholic Church and this simplified Tetum Dili with its strong Portuguese influence has become the language for intercommunication in present day Timor-Leste (Fox, 1996).
During the Indonesian occupation Bahasa Indonesia was taught as the primary language, however, in 1990, the Indonesian authorities adopted a policy to also teach Tetum in all primary schools and despite the diverse native languages that are used in Timor-Leste the majority of people now speak Tetum as their first language (Oenarto, 2000).

A survey conducted in 2013 by the Asia Foundation, a non-profit international development organisation who ‘work on the ground’ in 18 Asian countries, found that 87% of respondents prefer to speak Tetum for oral communication with Mambai (14%) as the second preferred language and Makassae (11%) third. When the survey was earlier conducted in 2004, Indonesian ranked second as a preferred language for oral communication (40%) showing that there is now a preference for local dialects (The Asian Foundation, 2013). While there are many different languages and differences in culture between the people of Timor-Leste, they do have things in common such as Catholicism, origin myths and their belief in the spirits of their ancestors. There is a belief that the mate klamar (ancestor’s spirits) have an underlying effect on the living. All local legal systems get their validity from the ancestors and their rules which they need to follow or they may be punished, for example with bad harvests or disease (Hohe & Nixon cited in Loch & Prueller, 2011).

There is a belief that conflicts are caused by imbalances, and that the post-conflict (after 1999) challenges in the country have been caused by disharmony between the living and the dead. However, “outsiders” do not recognise this worldview and instead attempt to resolve these tensions through poverty reduction programs and trauma workshops (Loch & Prueller, 2011). The traditional way of dealing with conflict is the ritual of nahebiti, a Tetum phrase meaning ‘stretching out the woven mat’, where all involved parties in the conflict, state their case and negotiate while sitting together on a straw mat (Babo-Soares, 2004). This is a shared custom among the many different ethno-linguistic groups of Timor-Leste (McWilliam, 2007). Traditional practices are becoming re-established such as the rebuilding of traditional ancestral homes (uma) and sacred houses (umalulic) which were destroyed during the Indonesian occupation. These houses are used for meetings, to house sacred relics, for celebrations and for conflict resolution (Richmond, 2011).

Timor-Leste is a patriarchal society, where women’s inequality is wide spread, affecting access to resources including land and limiting participation in decision-making (Henriques et al., 2011). For example, when women participate in agricultural
development programs, they do not make decisions such as seed choices, credit services and technologies but rely on men to do so (Asian Development Bank, [ADB], 2014). The constitution is discriminatory against women where a husband has the right to manage his wife’s personal assets and a wife is restricted in acquiring, disposing or encumbering property without the husband’s written consent (Hedditch & Manuel, 2010). Women make up 43.5% of subsistence agricultural workers with much of their work unpaid as it is considered to be part of their household duties and it is estimated that 70% of the women who work in agriculture and 46% in non-agricultural work do not receive any cash income (ILO. Rural Infrastructure for Women’s Economic Development in Timor-Leste: An Action Guide cited in World Bank, 2011b).

Elizabeth Traube (1986) studied the Mambai people saying they have a “single unified story that begins with the creation of the world and continues until the present.” They are the largest ethnic group in Timor-Leste and a significant number of them live in Ermera, the district where household surveys were conducted for the Timor-Leste Coffee and Poverty Project. The Mambai’s cosmology has themes of suffering, sacrifice, separation and loss. They see themselves as the oldest part of humanity that all others depend on and so have ritual obligations to all humans on Earth. When the Mambai perform any ritual they are doing it for all and they alone are promoting life for the whole of humanity. In Timor-Leste, the Mambai are perceived as being a people who are remote and impenetrable with special ritual knowledge (Traube, 1986) and have a reputation among the other ethnic groups of Timor-Leste as being backward and loyal followers to indigenous customs and beliefs (Traube, 2007).

The life for the Mambai in the mountains is difficult and the Mambai see their life as being bound to the land with all its harshness. The Mambai say “It is the earth which is our base.” To the Mambai they are the original inhabitants and guardians of the land, which is sacred with nature spirits providing protection and essentials such as food and water. This long association with country has been confirmed by recent DNA research which shows a 50 000 year link to the area with mixing only occurring in the last 10 000 years (Malaspinas et al., 2016). Mambai even describe themselves as stupid and ignorant and say that the only thing they know how to do is make a ritual. They are aware of the infertility of their land and perform rituals of prosperity, yet perceive and accept themselves as a poor people interpreting their poverty and the infertility of their land as part of their sacrifice for humanity (Traube, 1986).
3.7 Climate and agriculture

The climate of Timor-Leste has very distinct wet and dry seasons with monsoonal rain from December to March and then a prolonged dry season from June to October. The amount of summer rain varies from 600mm in the north-west with up to 3000 mm in the highlands (Borges et al., 2009). Most of the rainfall is in the form of torrential downpours, which results in a large amount of surface runoff and increased risk of soil erosion (World Bank, 2009). Over half of the yearly rainfall falls during the wet season. During this season, rainfall distribution can be uneven and droughts are common. The average temperature is 21°C but can vary with some mountainous areas at altitudes up to 3000m being quite cool (da Costa, 2003). The climate is influenced by the El Nino Southern Oscillation which impacts the volume and the timing of rainfall, with rainfall being less in the wet season with some places only receiving 25% of predictable rainfall. In El Nino years, the wet season can be delayed by up to three months causing issues for the planting of crops and, once the El Nino has finished, higher than average rainfall is likely causing flooding (Barnett, Dessai & Jones, 2007).

The impacts of climate change have now been documented across all the ecosystems on the planet with the global average temperature having increased by 1°C so far from pre-industrial levels (Scheffers et al., 2016). Increased temperature and rainfall in the next forty years due to climate change is predicted to be modest with an increase of 1.5°C and 10% rainfall (Molyneux, da Cruz, Williams, Anderson & Turner, 2012). Barnett et al. (2007) found that Timor-Leste is vulnerable to climate change, which may cause the climate to become more variable and hotter and drier in the dry season. The United Nations Development Programme (UNDP) (2016a) described Timor-Leste as “one of the top 10 countries most at risk of disaster,” with annual mean temperatures rising at a rate of about 0.016°C per year, sea levels rising at 6-9 mm per year and ocean acidification increasing, increasing problems with food security, water scarcity and health. Climate change leading to extreme weather events of drought, floods and cyclones will invariably cause crop yield losses (MAF, 2012). Oxfam research has found that even though many communities in Timor-Leste view climate change as being an issue there is little understanding of what can be done to mitigate and adapt to impacts of climate change (Oxfam, 2015).
Timor-Leste is a small country with an area of 14,874 km² that is extremely mountainous, has shallow, rocky, alkaline soils that are not very fertile and are prone to erosion (Barnett et al., 2007). In Timor-Leste, around 70% of the population experiences food insecurity (the percentage of households that are moderately to severely food insecure) (Oxfam Australia, 2008) with between October to February being the months of most difficulty before the main maize harvest. Rice and maize are the staple foods (Molyneux et al., 2012). Of the daily intake of calories needed by the people, rice contributes 42%, maize 26.5% and roots and tubers 6.4%. Only 3.5% is secured from vegetables, fish and meat (MAF, 2012). Food shortages are mainly caused by low yields, resulting from the poor soils, variable rainfall, steep slopes, high weed burden and post-harvest losses of up to 30%. Around 85% of the population are subsistence farmers with nearly 90% of rural people relying on agriculture for their livelihood. Agriculture does not produce enough to feed the population and around 30% of grain has to be imported into the country (Molyneux et al., 2012). There are four main types of farming. Rain dependent farming growing crops, such as maize, rice, taro, sweet potato, cassava, legumes; irrigated rice; plantation cash crops such as coffee (the only major export crop), coconut, rubber, candle nut; and hunting and foraging (Batterbury et al., 2015).

Livestock such as chickens, pigs and goats are common with some people owning cattle, buffalo or sheep (Friday et al., 2006). There is very little mechanisation used with most using traditional agricultural practices. Intercropping is used for crops such as cassava, maize and vegetables, with shifting agriculture still common through the process of clearing and burning natural vegetation, contributing to soil erosion and deforestation (Henriques et al., 2011).

The performance of the agricultural sector is very poor in comparison with similar countries with the country relying heavily on imports while being a very small exporter of mainly unprocessed commodities (MAF, 2012). The agricultural sector has several problems including extremely limited credit supply, basic post-harvest practices and facilities, poor quality in the produce, low access to inputs with plantation crops of coconut and coffee being very old and not maintained (World Bank, 2005c). Food insecurity is very widespread particularly in the upland rural areas with food shortages common between November and March (Fang, 2006). The major food crops, particularly maize and rice, and cash crops (coffee) continue to show erratic production and the productivity of all crops is very low (MAF, 2012).
The Timor-Leste Ministry of Agriculture and Fisheries Strategic Plan 2014-2020 has set targets for the agricultural sector including that the food supply will exceed demand, the area of irrigated rice will increase by 40% to 70,000 ha, 50% of fruit and vegetables will be produced locally and livestock will increase by 20% (MAF, 2012). For the development of Timor-Leste as a whole, agriculture is seen as the key in providing food, income, employment, taxes and levies, and foreign exchange (MAF, 2012). Coffee is the main cash crop for Timor-Leste and formed the basis of the Timor-Leste Coffee and Poverty Project by gathering baseline data on the current situation of coffee producing households and the challenges of alleviating poverty in this sector.

3.8 Coffee

Timor-Leste is the poorest country in Asia (Khamis, 2015) and the coffee growers are among the most vulnerable in the world coffee sector. This is why the Timor-Leste Coffee and Poverty Project was conducted as a case study of this vulnerable group. To lift people out of poverty it is important to empower the poorest of the poor and to have accurate information in order to work with these communities and the commodities that make up the majority of their household incomes. This study provided the opportunity to also explore the use of participatory action research (PAR) and empowerment theory to develop the project over numerous research trips and to explore how these relate to the concepts raised in post-development theory (PDT).

3.8.1 Global coffee production

Over 90% of the world’s coffee is grown in developing nations and since the 1940s coffee has been the second most valuable commodity in the world (after oil) (Khamis, 2015). According to World Bank estimates of 2005, 25% of people living in developing countries, meaning 1.4 billion people were experiencing extreme poverty and living on less than $1.25 per day. As of October 2015, the new International Poverty Line is now $1.90 per day based on purchasing power parity (PPP) to take into account differences in purchasing power (World Bank, 2017). Coffee is produced from over 70 countries with over 70% produced on small-scale family farms in 85 Asian, African and Latin American countries (Bacon, 2005). More than half comes from Brazil, Vietnam and Columbia with around nine million tonnes produced annually. In regard to international trade, coffee is viewed as the most valuable tropical agricultural product (United Nations Conference on Trade and
There are two species of coffee making up the international coffee market; *Coffea arabica* which accounts for more than 70% of the world’s coffee production, and *Coffea canephora*, commonly called robusta (Milas, Otero & Panagiotidis, 2004). However, recently there has been increasing demand for Robusta, which has lower production costs than Arabica (Gay, Estrada, Conde, Eakin & Villers, 2006).

In 2012 green coffee was valued at more than US$16 billion with the export valued at US$24 billion in 2012 (Food and Agriculture Organisation of the United Nations [FAO], 2015). More than US$90 billion of coffee is traded each year and it is the largest cash crop for 25 million farmers around the world (Henriques et al., 2011). Globally coffee is grown on around 10 million hectares and employs millions of small producers who rely on coffee for their major income (Rice, 2003). Many of the coffee growers, especially small holders, also face difficult natural growing conditions and challenges from climate change (FAO, 2015). A rise in the mean global temperature of between 1.4-5.8 °C by the end of the 21st century, has been predicted by the Intergovernmental Panel on Climate Change (IPCC). Temperature has been found to be the most important climatic factor for coffee production with production responding to seasonal temperature patterns (Gay et al., 2006). The temperature rise in East Africa, has already provided benefits to the most important coffee pest in the world, the coffee berry borer (*Hypothenemus hampei*) with reports of increased expansion of the pest’s distribution and increased damage to coffee crops (Jaramillo et al., 2011).

Like many other commodities, coffee tends towards overproduction which results in prices rising rapidly then plunging, with attempts to stabilise prices through international trade agreements having different degrees of success (Rice, 2003). From the 1960s to the 1980s the International Coffee Agreement (ICA) closely regulated coffee sales protecting coffee producing countries and stabilising the coffee price (Khamis, 2015). Quality standards and production and consumption quotas were set by the ICA for most of the coffee industry (Bacon, 2005). This agreement was between major producing nations and consuming nations who were members of the International Coffee Organisation (ICO) (Jaffee, 2007). The ICO is the world’s main intergovernmental organisation for coffee that brings together exporting and importing governments in order to work together to address issues in the global coffee sector. Currently the governments who are members represent 98% of global
coffee production and 83% of global consumption (International Coffee Organisation [ICO], 2016).

From the early 1960s around half of profits derived from the global coffee commodity chain were retained in the producer country due to the ICA. However, in 1989, in the context of a globalised market place with neo-liberal policies, a US led dismantling of this agreement occurred, leading to overproduction and coffee growers worldwide being paid record low prices (Khamis, 2015). Coffee growers were suddenly exposed to the free market with coffee reaching only 49 cents per pound in 1992 which was well below production costs, and falling even lower to only 41 cents per pound in December 2001, with small farmers receiving even less with their crop passing through several intermediaries before being exported (Jaffe, 2007). A small coffee farmer in Uru District of Tanzania stated:

“What has happened to the price of coffee is a disaster. Years back, when coffee prices were good, we could afford to send our children to school. Now we are taking our children out of school because we cannot afford the fees. How can we send our children to school when we cannot afford to feed them well” (Oxfam, 2001, p. 1).

When the coffee market began to show signs of improvement resulting in higher prices as discussed in a report from Oxfam America in 2005, this was not viewed as an end to the coffee crisis since the coffee market could not guarantee long-term stability for those growers at the bottom of the supply chain.

Oxfam America explains:

“But a few extra cents alone does not signal the end of the coffee crisis. Small-scale coffee farmers and farm workers are still extremely vulnerable to the coffee market’s price swings and the disproportionate market power of local buyers, international traders, and the multinational coffee companies” (Oxfam America, 2005, p. 7).

Coffee production continues to be in crisis with small-scale producers facing impoverishment and malnutrition, shade-coffee plots abandoned or destroyed, plantation workers unemployed and further effects through the related economic sectors (Jaffee, 2007). The low price that growers have been receiving is not being passed onto consumers. Between 1975 and 1993, while the price for wholesale coffee dropped by 18%, the retail price rose by 240% (Jaffee, 2007). The global economic crisis of 2008 resulted in coffee
prices falling again almost 20% between the end of August 2008 and April 2009 (UNCTAD, 2009). The value of coffee production since 2008 has grown over 3.5% per year and between 2013-2014 prices rose with Arabica going from US$2.90 to US$4.18 and Robusta from US$1.96 to US$2.09 (FAO, 2015).

The coffee industry is made up of two different categories, industrial coffees (canned or instant) and specialty or gourmet coffees. International coffee firms now have new production technologies allowing the use of cheaper Robusta beans rather than the more expensive Arabica beans which allows the firms to get record profits, while the growers continue to suffer. It is estimated that a roaster’s profit margin is around 15% while the four biggest industrial coffee companies’ current profits are at 110% (Rice, 2003). Millions of small-scale coffee growers are vulnerable with the rest of the production chain concentrated with just two companies, Nestle and Philip Morris, controlling about half of the world market share for instant and roasted coffee (Hira & Ferrie, 2006).

The global trading market as well is dominated by just three international traders which control one-third of the market share. This has resulted in growers receiving only 9% of the retail price for roasted and ground coffee in comparison to the 20-30% received for fairly traded coffee (Hira & Ferrie, 2006). Celine Charveriat of Oxfam comments, “... corporate gain is consigning some of the world’s poorest and most vulnerable people to extreme poverty” (Oxfam, 2001, p. 1).

A demand for specialty and eco-labelled coffees has been created due to the unfairness in the system of international trade and consumers becoming increasingly aware in issues of taste, quality, health and the environment (Goodman cited in Bacon, 2005). Specialty markets have grown at a rate of 10% over the past ten years while the overall coffee market has expanded only 2% (Oxfam Australia, 2004). Specialty coffee accounts for 10% of all coffee exports (Rice, 2003) and includes gourmet quality coffee (93%), fair trade certified (4%) and others such as organic (Oxfam Australia, 2004), with fair trade, shade and organic collectively referred to as sustainable coffees (Giovannucci, 2001). Small coffee roasting companies initiated introducing organic and fair trade coffees into the United States which helped make the specialty coffee market the most active area for eco-labelling in the food sector (Bacon, 2005).

Of the specialty coffees, only fair trade certified guarantees a minimum price despite world market fluctuations, which has been above the market price for the greater part of the last
decade (Raynolds, Murray & Heller, 2006). Fair trade coffee was the first commodity to be fairly traded and is the number one labelled fair trade commodity in the global market (Jaffee, 2007). Fair trade has standards that state that traders pay prices for commodities that covers the costs of sustainable production and livelihoods, provides for social development, gives pre-harvest credit and stimulates stability and planning that is long term (Bacon, 2005). “Fair Trade is a trading partnership based on dialogue, transparency and respect, that seeks greater equity in international trade. It contributes to sustainable development by offering better trading conditions to, and securing the rights of, marginalized producers and workers…” (Bacon, 2005, p. 500). It is based on a strategy to alleviate poverty and empower producers, through “trade not aid” by challenging historical unequal international market relations (Raynolds, 2002). Producers can have a chance to “increase their control over their own future, have a fair and just return for their work, continuity of income and decent working and living conditions through sustainable development” (Fairtrade Foundation, 2000).

Many development initiatives that seek to help the poor have not taken their knowledge or concerns seriously and do not view them as the best agents of their own development (Boersma, 2009). The United Nations Declaration on the Right to Development identifies this right as “an inalienable human right and asserts that human beings have an individual and collective responsibility for development” (Lyon, 2007, p. 250). The alternative fair trade market is not charity, or relief work or any other type of neocolonial form of aid (Boersma, 2009). The fair trade certification means that a premium is paid in addition to the purchase price of the coffee, which is to be used for community development (Grenfell, 2005). When consumers buy fairly traded products they support small producer’s rights to be responsible for their own community development.

Fair trade is the only initiative that is only open to small-scale producers with the certification given to the producer cooperatives which requires small farmers to be organised into democratic associations, thus building local capacity (Raynolds et al., 2006). The direct trade relationship allows the fair trade producers to “bypass the often exploitative local buyers and enable groups to bargain more effectively with large buyers” (Taylor cited in Lyon, 2007). Yet power is still with the corporation and consumer end of the supply chain, not the producers (Grenfell, 2006).
Responsible business and alternative trade initiatives are an important part of the sustainable globalisation movement that challenges conventional value chains and the increasing power of transnational corporations (Utting, 2009). The fair trade movement resulted from increasing frustration with free trade agreements, inadequate progress in the reduction of extreme poverty and increasing gaps between the richest and the poorest (Hira & Ferrie, 2006). Many consumers are worried by the unfairness in the international trade system and specialty coffees can offer price premiums to producers (Jaffee, 2007). Clark (2007) states; “Fair Trade coffee owes its meteoric success to one fact: we feel especially guilty about the social and environmental costs of the coffee we drink.”

The goal for businesses to market eco-labelled and fair trade coffee is to persuade the consumer to pay more, which provides economic incentives to producers to seek certification (Heidkamp, Hanink & Cromlry, 2008). To reduce the impacts of low coffee prices, many producers now seek certification through sustainability and fair trade systems to distinguish their product in the market place with consumers paying premium prices (Kilian, Jones, Pratt & Villalobos, 2006). More than a third of fair trade certified coffee is also certified organic (Fairtrade International [FLO], 2010), with this double certification expected to have the greatest growth in the market for sustainable coffee (Giovannucci & Koekoek, 2003). To produce organic coffee, methods and materials must be used that have low impacts on the environment (Organic Trade Association [OTA], 2008). No chemical pesticides or fertilisers can be used and the organic coffee must be kept separated from conventional coffee with documentation recording the chain of custody between the tree and the consumer (Jaffee, 2007).

There is debate about the validity, strengths and weaknesses of the different certification schemes. Neilson and Pritchard (2010) propose that certification schemes can be empowering or constricting for agricultural producers, Friedberg (2003) comments that agricultural certifications are only a new way to package products, with Taylor and Scharlin (2004) believing that they provide important positive effects (cited in Raynolds et al, 2006). Hira and Ferrie (2006) consider whether fair trade is actually supporting a ‘losing game’ to developing countries. Many coffee producers, even with access to fair trade and other certifications such as organic are working and living in terrible conditions. John Maynard Keynes, the economist stated; “Proper economic prices should be fixed not at the lowest possible level, but at the level sufficient to provide producers with proper
nutritional and other standards in the conditions in which they live…” (cited in Jaffee, 2007, p. 58).

3.8.2 Coffee production in Timor-Leste

The Gross Domestic Product (GDP) of Timor-Leste was worth US$1.44 billion in 2015, which represents less than 0.01% of the world economy (Trading Economics, 2017). Aside from gas and oil, agriculture is the foundation of Timor-Leste’s economy and employs 80% of the work force while contributing 40% of GDP (Daniel, 2008). Coffee is the country’s leading export commodity and is a very valuable resource with 12 500 tons exported each year, contributing US$10 million in 2012 to foreign exchange earnings, and accounting for 80-90% of non-oil exports (Khamis, 2015).

While the Portuguese first came to Timor-Leste in the early 1500s it was the Dutch who brought coffee to the South East Asia region in the mid-eighteenth century and established the Dutch East Indies as the main coffee growing region in the world (Rice, 2003). During the 1860s the Portuguese governor, Affonso de Casto in Timor-Leste ordered every family to plant 600 coffee trees as a new way to raise revenue for Portugal since the sandalwood trees had been harvested nearly to extinction and numerous areas were to be planted with coffee with many areas converted into coffee plantations often through forced labour of the indigenous population and through confiscation of lands, making coffee the dominant export commodity (Nevins, 2003). Coffee was mainly grown by small farmers on less than two hectares, with a few large producers holding large plots of land and with the local and export markets being controlled by Chinese and European middlemen who often economically exploited the smallholder coffee growers (Henriques, Lucas, Carvalho & Deus, 2012). Under Indonesian occupation, the coffee sector was seriously reduced by destroying trees and processing facilities (Nevins, 2003), farming practices were not maintained or developed and profits made were not returned into developing the coffee sector even though coffee continued to be the main income activity with the Indonesians only interested in getting money through whatever coffee was harvested and then selling it cheaply, mainly through the Indonesian port of Surabaya (Henriques et al., 2012). The company P. T. Denok was established by the Indonesian military which took control of all coffee plantations and some smallholdings and fixed prices well below the international rates; by the early 1980s coffee farmers were only receiving one sixth of what coffee farmers were receiving in West Timor (Nevins, 2003). In 1983 for instance, P. T. Denok
earned US$18 million just by underpaying the coffee growers. Through Indonesia giving the Indonesian military control of the coffee sector, enormous profits were generated for the trading company, the military, and Indonesian businessmen (CAVR, 2005), with these profits often financing the Indonesian occupation (Henriques et al., 2012). The monopoly of PT Denok and other related companies ended in 1993 in an attempt to increase coffee production for foreign exchange earnings, which also allowed coffee growers more opportunities to process and trade their coffee to other agents (da Costa, 2003).

From 1994 the US National Cooperative Business Association (NCBA) starting working in the coffee sector of Timor-Leste through the use of a grant given by USAID of US$6.8 million to help to develop coffee cooperatives (UNDP, 2006) allowing for increases in the income of coffee growers (Henriques et al., 2012) and resulted in a gradual increase in coffee exports to international markets (da Costa, 2003). The NCBA worked with the East Timor Centre for Village Unit Cooperatives (PUSKUD) to improve the coffee sector. In 1999 during the aftermath of the referendum, many of the coffee processing facilities that had been established were damaged or destroyed, with work beginning in early 2000 to rebuild the project and PUSKUD changing its name to Cooperativa Café Timor (CCT) (Oxfam cited in Grenfell, 2005). After independence other players entered the coffee market buying directly from growers, the most prominent being in addition to CCT, Timor Global, Timorcorp, ELSAA Cafe, Always Cafe and NGOs (Henriques et al., 2012). Dr Damian Grenfell from RMIT Global Research Centre believes that NCBA ensures that Timor-Leste maintains an economy based on commodity exports for purchase by transnational corporations that allows for the growers to remain poor and the corporations to make massive profits thus locking people into poverty rather than alleviating it but does conclude that these schemes should not be totally dismissed but need longer term strategies put in place (Grenfell, 2005). Grenfell (2005, p. 84) comments:

“A development project that lays infrastructure for an industry at a time when little else exists, in combination with a program that is able to sustain people just above subsistence level, but without enough financial support to diversify, runs the risk of creating structural dependence. In such a case, the continued sale of green bean to transnational corporations would appear virtually guaranteed.”

Henriques et al. (2012) note that the main consequence for the coffee industry from the Indonesian occupation, was coffee growers being disinterested in cultivating coffee since
they had merely been guardians of the plantations as well as their small holdings, by only harvesting and not maintaining or developing the sector. While coffee continued to be one of the main cash crops during the Indonesian occupation, it became extremely important post-independence for the development of rural areas (Henriques et al., 2012). The production of coffee in Timor-Leste is small in comparison to global production at only 0.2% of the world coffee supply, with about 80% being high-quality Arabica and Timor-Leste being the world’s largest single source producer of organic coffee (MAF, 2012). Robusta is grown at 600-1000 metres with Arabica at higher altitudes of 1000-2000 metres.

Timor-Leste’s coffee is unusual since it is more like a forest than an orchard, and due to lack of attention is organic by default, which has allowed for the coffee to be sold on international markets for a top-end price (Henriques et al., 2011; Henriques et al., 2012). For coffee to be certified organic, chemical fertilisers and pesticides cannot be used and the organic coffee must not come in contact with non-organic coffee, with strict documentation recording the chain of custody from tree to consumer (Jaffee, 2007). Some coffee industry members believe the only difference between certified organic coffee and coffee grown in the “rustic tradition” without the use of any agrochemicals is the cost of certification (Giovannucci & Koekoek, 2003).

Coffee is grown mainly in the districts of Aileu, Alnaro, Liquica, Manufahi and Ermera, where over half of all coffee is grown with around 50 000 families dependent on producing coffee for 6 months of the year on around 55 000 hectares (Khamis, 2015) making around 200 000 people dependent on coffee for 90% of their cash income (CAVR, 2005). The roads that connect to the coffee plantations are often in very poor condition or blocked off completely, making accessing the market very difficult and are one of the key constraints facing smallholder farmers getting a good price for their coffee (The World Bank, 2013). Timor-Leste is the poorest country in Asia and the coffee farmers are among the most vulnerable in the world coffee sector (Khamis, 2015). Malnutrition is still a problem, especially in highland coffee growing areas. Since coffee is the country’s main cash crop it may become a monoculture in agricultural areas that would be more suited to different crops, livestock or forestry and in order to give protection from food insecurity, diversification should be employed (da Costa, 2003).
The Australian ABC program Landline in 2010 featured a program on the organic coffee of Timor-Leste, investigated by journalist Tim Lee who commented:

“It’s easy to see coffee production as a panacea to East Timor’s rural poverty. Already, 30,000 families are benefitting from farmer cooperatives. But in truth, it will take a decade to renew the industry. The more immediate need is for food crops – crops not reliant on the vagaries of export markets and crops which can ease the burden of hunger and poverty.”

The main variety grown in Timor-Leste is the high-quality *Hibrido de Timor Arabica*, which is grown at relatively high altitudes and resulted from a natural cross breeding of the Arabica (44 chromosomes and high quality) and Robusta (22 chromosomes and rust resistant) in the 1930s; this variety is unique in the world, is disease resistant, and has allowed varieties of Arabica coffee to be improved, with it forming the basis of global Arabica coffee production (Henriques et al., 2012; Henrique, 2013). Ferrao comments about the contribution Timor-Leste has made to the global coffee sector:

“The arabica coffee producing countries have to Timor, and also to the technician who evaluated its merits and then studied and worked, a feeling debt of gratitude for the granting of the Hybrid of Timor, because from it were obtained cultivars with good yield potential and resistance to rust, that today form the basis of the world production of Arabica coffee” (Ferrão cited in Henriques et al., 2012, p. 503).

In 2010, Starbucks introduced the “Clover” range of coffee from Timor-Leste, which was grown at 1500 metres, is fair-trade certified, organic, and made of the high quality *Hibrido de Timor Arabica* (Khamis, 2015). A coffee industry observer commented that any new improved varieties introduced into the coffee industry in Timor-Leste could be problematic since they lack resistance to disease, they have high input demands and the fruit matures at the one time. The Timor-Leste hybrid however, is resistant to coffee rust (*Hemileia vastatrix*), is suited to low inputs and can withstand the poor soils and erratic weather of Timor-Leste, and the coffee cherry does not mature all at once which allows harvesting to occur over several months (Oxfam Australia, 2004).

Since Timor-Leste’s coffee is organic and most farmers work with cooperatives like fair trade this makes their coffee even more attractive to consumers who are interested in the welfare of producers and environmental sustainability, and puts Timor-Leste in a unique
situation to exploit such a valuable commodity. Yet the involvement of transnational corporations in the fair trade market could potentially threaten the integrity of this system if they are allowed to partake at token proportions of their overall volume which results in fair trade predominantly being a “fair-washing” device to improve the image of corporations with poor human rights records (Chambers, 2009).

Starbucks buys 40% of the coffee produced in Timor-Leste (Khamis, 2015). It is the world’s largest specialty coffee roaster, buying about 10% of the specialty coffee market’s green beans, yet does not sell other fair trade products such as tea or cocoa, products which do not attract the same degree of activist pressure (Fridell, 2009). It appears that the commitment Starbucks has to fair trade is limited to “the minimum needed to keep public criticism at bay” (FLO cited in Fridell, 2009). The “un-fair” nature of fair trade is that it becomes a marketing strategy rather than a way for corporations and consumers to give a better deal to and empower third world producers and allows transnational companies such as Starbucks to make claims such as they assist in the building of health clinics based on the fair trade premiums paid to be used for community development as well as coffee brokers such as Holland Coffee who also make such a claim (Grenfell, 2005).

The process of coffee production involves the following steps. The first step is to pick the coffee cherry, then produce the parchment, next green coffee, then finally roasted coffee, with smallholder farmers producing the cherry and parchment, and agricultural businesses producing and exporting green beans. Coffee farmers traditionally produce their own coffee parchment either through wet or dry processing. In dry processing, the coffee cherry is picked, dried for ten days in the sun, peeled, or alternatively it is picked, pulped, fermented in baskets then dried. This process allows for great variability in quality with the wet process preferred as it produces higher quality coffee (Henriques et al., 2012).

According to USAID/NCBA if the dry processing method is used, the final price of the coffee will be 30-50% below the price of correctly handled wet processed coffee cherry (UNDP, 2006). However, many growers do not have enough water to process their coffee this way so dry processing remains the traditional method (Oxfam Australia, 2004).

Through the wet processing method, the fruit pulp of the coffee cherry is removed within 24 hours of picking, then soaked in water to detach the mucous membrane and then sun-dried (referred to as wet-milled) (Khamis, 2015). This is the best way to process coffee cherry into green coffee, as it produces superior quality and has been used since the early
20th century in Timor-Leste (Henriques et al., 2012). However, many farmers who use the wet processing method produce a poor quality product since they process by traditionally using an open hole that allows for contamination and therefore loss of quality (Amaral, 2003). Coffee that is for export, is mechanically peeled and quality controlled through selection and classification (Henriques et al., 2012). CCT uses the wet processing method (Amaral, 2003) and is the largest single source producer of organic certified coffee in the world (USAID, 2009), is 100% Timorese owned and processes and markets certified organic coffee on behalf of its producer members (Piedade, 2003).

Fifty-three thousand hectares out the total 55 000 hectares of coffee is grown under the canopy of *Paraserianthes falcataria*, the trees commonly grown in Timor-Leste to provide shade for coffee plantations (World Bank, 2009). In 2001 it was found that 67% of the total coffee plantations in Timor-Leste across all eight districts that grow coffee, were infected with a rust disease of the shade trees, with Ermera being one of the most affected areas. This disease affects all parts of the tree, causing defoliation and killing shoots and will eventually kill even large trees. The coffee then is damaged by falling branches and loss of shade that results in reduction of the coffee yield (Old & Cristovao, 2003). The World Bank’s Country Environmental Analysis of Timor-Leste in 2009, estimated the rust infestation of the shade trees at 95% and recommended that the dead and diseased trees be removed and replaced. The Cooperativa Café Timor (CCT) with USAID funding is supporting a tree nursery to give shade tree seedlings to coffee farmers (World Bank, 2009).

The Australian ABC program Landline program on organic coffee interviewed the Timor-Leste Agriculture Minister who commented about the old coffee trees that need replacing and that the government had instigated a number of programs to achieve this. The diseased shade trees are being removed and replaced, pruning of coffee plantations is being undertaken, and better harvesting and processing methods are being introduced (Landline, 2010). During the period 2008-2011, the Ministry of Agriculture and Fisheries (MAF) provided 373 coffee pulping machines and a target by 2020 is for coffee production to have doubled due to the rehabilitation of 40 000 ha of coffee plantations (MAF, 2012). In 2013, USAID’s Consolidating Cooperative Agribusiness Recovery (COCAR), trained over 3000 coffee farmers in techniques of improved farm management with coffee growers pruning over 460 000 coffee trees in five coffee producing districts, resulting in a doubling of their yield (USAID, 2016).
The coffee sector is very inefficient being badly managed and lacking resources with investment being essential for its development; using machinery and improved pruning and tree management could triple crop yields (Khamis, 2015). Generally farmers do not prune, clean the plantations, undertake any control of pests or diseases, or replace old trees, but just harvest existing trees (Henriques et al., 2012). On average about 225 kg/ha of coffee is produced, yet comparative research has suggested that it is possible to produce yields of between 1300-1400 kg/ha (MAF, 2012). Recently Taur Matan Ruak, President of Timor-Leste has even suggested the use of pesticides to improve coffee crops but of course the coffee would then lose its advantage of being certified organic (Khamis, 2015).

3.9 Foreign aid and development history in Timor-Leste

After the violence that occurred as a result of the referendum for independence in 1999, the United Nations Security Council responded by sending The United Nations Integrated Mission in Timor-Leste (UNMIT), a multinational peacekeeping force. Over the next few years, five peace-keeping operations were completed. The UN’s intention was to assist the government through various UN agencies, funds and programs to organise elections, build capacity in the justice, government and security sectors, strengthen human rights, and investigate human rights abuses, with the UNMIT ending on 31 December 2012 (UN, 2012). During this period there were also two military stabilisation deployments led by Australia and an enormous amount of international and humanitarian aid and development programs undertaken (Lothe & Peake, 2010).

Timor-Leste could not have recovered or been rebuilt to the extent it has without the UN’s assistance. The UN was learning how to build a state, Timor-Leste was trying to learn how to be one (Kingsbury & Leach, 2007). However, the role the UN has played in Timor-Leste is not without criticism. During the United Nations Transitional Administration in East Timor (UNTAET) which ended in May 2002 when Timor-Leste gained its independence, there was little consultation with the Timorese and a resistance to involve them in development roles (McGregor, 2007).
Xanana Gusmao, the former President and Prime Minister in 2000 accused the UN of not engaging East Timorese in the transitional process to independence:

“We are not interested in a legacy of cars and laws, nor are we interested in a legacy of development plans designed by [people] other than East Timorese. We are not interested in inheriting...the heavy decision-making and project implementation mechanisms in which the role of the East Timorese is to give their consent as observers rather than the active players we should start to be” (Dodd, 2000).

The Marshall Plan of 1949 mirrored the way reconstruction, state-building, security and development was instigated in Timor-Leste after the 1999 referendum (Shepherd, 2009). The Marshall Plan had become a model for American style post-war development and reconstruction and so the UN hoped that Timor-Leste would provide a model for future state-building undertakings (Shepherd, 2009). The prevailing state-building and peacekeeping programs disregard or trivialise the dynamics of the society they are assisting (Richmond, 2011). Hohe (2002) argues, that to achieve successful state-building the international community must understand local paradigms and fully consider and understand the existing systems to avoid anarchy or the collapse of the social system or total failure of the international intervention, as it is perceived as being irrelevant to the people they are assisting.

In the first few years after the referendum, when determining the future role of the UN in Timor-Leste, there were many (especially within the UN itself) who felt that the East Timorese were unreliable, lacked skills, were not ready for self-governance and that the UN should remain (Chopra, 2002). The international community has repeatedly underestimated the people of Timor-Leste with many believing the referendum would fail and yet they voted for and achieved their independence through a combination of civil resistance, international solidarity networks and guerrilla warfare against the Indonesian occupiers (Kingsbury & Leach, 2007). Richmond (2011) outlines some of the comments made by donors in a focus group (focus group RAMSI, 2009) saying the East Timorese lack capacity, are not ready to be independent, there is too much corruption, the people want handouts, their culture and traditions are impeding their development, they have no national identity, with these comments from the perspective of the local people being arrogant, insensitive and colonial which demonstrates how little each position understands the other.
3.9.1 The development sector and humanitarian agencies

The development industry came to Timor-Leste with an overwhelming presence and enthusiasm which is rarely witnessed in developing countries (Shepherd, 2009) mainly due to its history of Portuguese colonialism, Indonesian occupation, the violence and destruction in the aftermath of the referendum and the mix of optimism and political instability that has since emerged (Kingsbury & Leach, 2007). UN governance machinery, international business interests, armies and continual suppliers of foreign aid all came together, with the density of development organisations operating and overlapping being astonishing and hailed as the “development invasion” by Brunnstrom (2003).

Timor-Leste was assisted in its reconstruction with infrastructure and human welfare aid programs as well as strategies to build peace and stability (Loch & Prueller, 2011). Timor-Leste has followed similar development approaches as other developing countries with a selection of multilateral, bilateral and NGO organisations establishing themselves in the capital Dili with “interventionary action radiating in every district” (Shepherd, 2009, p. 316). Within two months after the 1999 referendum, the International Monetary Fund (IMF), the World Bank, the Asian Development Bank and other organisations had sent 40 members to Timor-Leste to do a two week survey to determine the development needs of the country and to report these needs to donors in Tokyo. Transferring aid from developed nations to poor countries encourages economic growth and should speed up the time it will take for the country to be independent of aid again. However, there is a negative aspect to aid where many developing countries have experienced becoming dependent on foreign aid which develops a relationship of imperialism between the donor states and the country receiving aid (Oenarto, 2000). Tonchev (2005) suggests that the primary reason for aid to be given to post-conflict countries is for regional stability, hence why Australia and Japan are principal providers of aid to Timor-Leste.

The international aid community and academics have been intensely focussing and scrutinising Timor-Leste and viewing it as a ‘testing-ground’ where the latest ideas in international aid can be tried which often produce mixed results (Kingsbury & Leach, 2007). Even though it is argued that the aid and development strategies were attuned for fragile-states, there were serious deficiencies with the development assistance and aid, through employing short term fixes instead of addressing the underlying issues, short-term training instead of capacity building and a high turnover of personnel (Lothe & Peake, 2010).
After the 2006 crisis, international agencies returned in greater numbers to Timor-Leste using the same development model which had already proved to be ineffective, namely implementing large development programs through the public sector with special emphasis on capacity building through giving technical assistance, as well as delivering this aid and development by people who did not understand the language, culture or political situation in the country (Lothe & Peake, 2010). A study that investigated Cambodia’s experience of aid, found that most of the projects undertaken are donor driven in how they are designed and undertaken, impairing institutional capacity building (Tonchev, 2005).

Jose Ramos-Horta, a former Prime Minister and President of Timor-Leste, has given many speeches regarding one of the major development issues facing Timor-Leste – the use and distribution of aid. The following is an excerpt of a speech he gave at the University of New South Wales in 2009:

“...We are told that the international community has spent, in the last ten years...three billion dollars on East Timor. I have to say that I never saw this money, the people don’t see it in the villages...much of it [has been spent] on consultants, study missions, reports and recommendations. We have an estimate that suggested some 300 studies and reports have been done on East Timor. We have been psychoanalysed from every angle...[of the] three billion dollars, a lot they claim to have spent on training capacity building schemes. Yes we needed that and I think there has been some positive use of that. But, if that money was really used for capacity building in the proper way, so much money, every Timorese would have a PhD by now, we would be Einstein’s by now...[said in jest] Either we, the East Timorese are the dumbest people in the world, or they send us the dumbest people in the world to teach us...” (Horta cited in UNSW, 2009).

3.9.2 Non government organisations

Many non government organisations (NGOs) use small grassroots development programs with an overall aim to empower people to become self-reliant, with these programs typically involving training and education to give skills and build capacity (Nagel, 2013). An example is the Portuguese Mission Agriculture Program which works in villages in the coffee growing areas providing sustainable agricultural practices and training to coffee farmers (Oxfam Australia, 2004). There is enormous variation in how development
programs and aid are carried out in Timor-Leste, with some NGOs working with communities and others purely commercial with some a mixture of the two. One such example of the mixture of development and business is USAID allowing Starbucks to access the coffee in Timor-Leste which according to Grenfell (2005) helps in understanding the ongoing relationship of coffee and colonialism in Timor-Leste. The NGO sector has advantages in that it can promote development through inclusiveness, participation and being locally relevant. Yet as Kelly (2013) discusses in relation to NGOs working in agriculture to improve food security in Timor-Leste, there are problems in the NGO sector with communication, collaboration and coordination all lacking, leading to resources being wasted through programs being duplicated and ineffective.

3.9.3 Impact of aid on poverty
In 2000, the United Nations set the goal of halving global poverty by the year 2015 and established eight Millennium Development Goals (MDGs) in order to achieve this. The eight goals were to eliminate extreme poverty and hunger, achieve universal primary education, promote gender equality and empowerment of women, reduction in child mortality, improvements in maternal health, combating diseases such as malaria, environmental sustainability, and creating a global partnership for development (Oxfam, 2015). Globally there were improvements achieved as a result of the MDGs with the halving of those living in extreme poverty (less than US$1.25 a day), reduced infant mortality by more than 50% with a doubling of maternal childbirth survival rates, 91% of children in primary school and an almost 50% increase in access to piped drinking water (Oxfam, 2015). The Timor-Leste Millennium Development Goals Report of 2014 outlined the outcomes of the MDGs and included results of infant and under five mortality declining by around 50% since 2001, TB cases were detected and cured and the targets set for the proportion of women in parliament were met. However, while there have been improvements in the reduction of malnutrition, primary school enrolments, access to clean drinking water and antenatal care, the targets set by the MDGs have not been met (Timor-Leste Millenium Development Goals Report, 2014).

In order to achieve sustainable growth and development, there are essential pre-conditions. It is essential to have political stability, peace and security and good governance in order to allow for sustainable growth and development (MAF, 2012). Globally a new set of development goals have now been developed in consultation between the UN and
governments, business, institutions, academics and individuals, called the Sustainable Development Goals (SDGs) with the aim of eliminating extreme poverty globally by 2030. Timor-Leste during the negotiation phase of developing the SDGs stressed the importance of peace, security and good governance (Oxfam, 2015). Peace and stability are essential before poverty can be eliminated and therefore those countries that are in a fragile or post-conflict state could not achieve the MDGs (Timor-Leste Ministry of Finance, 2014). In 2010 the g7+ was established comprised of a group of fragile states with the aim of state-building, peace-building and the eradication of poverty through new development approaches (g7+ Goodbye conflict, welcome development, 2017). These conflict affected countries recognised that even though they had been given very generous development assistance, its effectiveness had not been notable and believe that development policies need to be modified and tailor-made for conflict affected states and that there needs to be reforms in how the international community engages in these countries (g7+, 2017):

“We, the member countries of the g7+, believe fragile states are characterized and classified through the lens of the developed rather than through the eyes of the developing” (g7+ Statement, 2017).

There is general disapproval with international agencies that support and practice in ways alien to the locals, which results in local and international approaches being separate and ignored by each other (Richmond, 2011). Timorese staff at a local NGO believed that the international community was not interested in their needs but only in using Timor-Leste to project their Western values and organisations onto Timor-Leste and its people (Staff at La’o Hamutuk cited in Richmond, 2011). McGregor comments, that there appears to be an “ongoing socialization process,” where local representatives are taught how to “think and act like development actors” to support the standard development agenda and once this is achieved they can then be trusted with their ideas of future directions to undertake (McGregor, 2007).

A major challenge for Timor-Leste is to design and apply programs that will address the poverty that is so pervasive in the country and enable it to attain the SDGs. The Timor-Leste Strategic Development Plan of (SDP) 2011-2030 aims to create a strong and prosperous nation that reflects the desires of the people of Timor-Leste, and incorporates the vision of the 2002 National Development Plan. The 20 year plan is aimed at transforming Timor-Leste into an upper middle income country, which is healthy,
educated and safe (Government of Timor-Leste, 2011). With Timor-Leste being ranked 133 out of 188 countries on the Human Development Index (HDI), a measurement of not only economic development but also the development of the people and their potential (UNDP, 2015), development must not only incorporate the basic needs of people but human development is also a priority. Development must be geared towards “enlarging people’s choices, providing every individual with the opportunity to make the most of his or her abilities” (Sergio Vieira cited in UNDP, 2006).

3.9.4 Participatory action research

Friday et al. (2006), undertook a rural development project using participatory research approaches in Timor-Leste in 2004 and found that even though outside aid agencies had thoroughly investigated the local needs and wants of the farmers through several reports, the local farmers in fact had very different views to the aid agencies, and had a participatory approach not been taken in this research and collaboration not been undertaken, the opportunity for agricultural development to actually be relevant to the local people would have been missed. Participatory approaches are: “… about finding ways for the disempowered to develop confidence in their own voice, own abilities, and resources that could lead to their empowerment” (Angeles, 2005, p. 507).

Friday et al. (2006) speculate that nations that have been colonised and then gain their independence such as Timor-Leste, could be open to more participatory development with the new power structures in place. Under Indonesian rule the agricultural sector was centralised, patronising and authoritarian with the people of Timor-Leste being very socially and economically dependent; yet with the removal of the colonising lines of authority and the collapse of institutions there could emerge new opportunities to work with the Timorese in a more participatory way.

Difficulties with participatory research in Timor-Leste are discussed by Friday et al. (2006) in regard to agricultural development projects, where it was concluded that this approach takes time and that there needs to be allowance for project start up time, a slow change in viewpoints, changing roles and unexpected events. AusAID in the context of Timor-Leste suggested that project timelines needed to be flexible in order for participatory approaches to achieve a thorough consultation process with the local farmers and sustainability of the development projects (UNDP cited in Friday et al., 2006). Kieffer
(1984) observes the importance of time and practice in order to develop participation skills in the process of empowerment.

### 3.10 Summary

Chapter Three provided the context for the participatory action research cycles that are discussed in this thesis. It outlined an overview of historical, economic, agricultural and cultural elements that are important to understanding the significance and unique placement of the **Timor-Leste Coffee and Poverty Project**. Coffee is a large contributor to the GDP of Timor-Leste and also to a vast number of individual households in Timor-Leste. It is evident that to increase the standard of living of the poorest of the poor in Timor-Leste, that the socio-economic situation of coffee growing households needs to be understood. In order to try and avoid the paternalistic qualities that development and research itself can bring to a post-conflict less economically developed country however, the approach of participatory action research and collaborative methods is discussed in the next chapter, Chapter Four.
Chapter Four: Research design

4.1 Methodological framework - overview and rational

The first three chapters of this thesis identified issues in development and discussed the emergence of post-development theory to challenge the concepts of traditional development approaches in less economically developed countries (LEDCs). The challenges that aid organisations and researchers encounter when working and researching in LEDCs were outlined and the strategies used by governments, non-government organisations and researchers to meet these challenges were explored. Timor-Leste, a post-conflict LEDC, was introduced as the case study region for this research. Participation to achieve goals such as the Millennium Development Goals and now the Sustainable Development Goals requires engagement at different levels which makes participatory action research (PAR) an effective framework for developing collaborative research.

This chapter describes the research methodology and overall framework for conducting and reflecting on the research using participatory action research. This chapter provides the justification for using the research approach, the methods and the individual processes that were implemented in this research, and outlines the participatory action research cycle (PARC) approach that was used throughout the Timor-Leste Coffee and Poverty Project. Ethics and collaboration in relation to cross-cultural projects conducted in LEDCs are also discussed. Further details on the methods utilised in each PARC are discussed in Chapter Five.

With 836 million people living in extreme poverty around the world (UN, 2017), development as a way to alleviate poverty is not working for many of the world’s poorest, with poverty and inequality persisting (Kothari & Minogue, 2002). Poverty and food security are problematic for LEDCs (Oluoko-Odingo, 2009) along with discrimination, a lack of services and participation in decision-making (UN, 2017). With a one-size-fits-all development agenda, researchers often do not acknowledge differences in culture, history, context or power (Cornwall & Brock, 2005). Researchers need to be mindful of the impacts research has had on indigenous people in the past and ensure the research is decolonising (Goulding et al., 2016). Liamputtong (2010) observes that conducting cross-cultural research is full of methodological and ethical challenges, though discussions on culturally sensitive methodologies are largely neglected. However, despite this lack of
guidance for researchers, it is essential to make sure cultural considerations are taken into account and the research conducted ethically (Liamputtong, 2010).

The concept of post-development theory (PDT) reflects on the motives and premises of development (Escobar, 2010) and highlights the need for more ethical ways of conducting research and undertaking development projects (Brigg, 2002). PDT promotes empowerment and transforming LEDCs with practices that are focussed on being within the country’s own culturally defined desires in a participatory and community based way (Matthews, 2004; Watts, 2005). The PAR approach is aimed at developing the full potential of people, by them being fully involved in the development projects that directly affect them, builds on strengths already present while having trust in local people and organisations to identify their issues and plan solutions more effectively than outsiders (Angeles, 2005). PAR emphasises the need to have mutual respect, trust, effective communication and equitable decision-making, along with an understanding of the cultural issues, collaborative research, with results being beneficial to the people or communities who the research is for (Westby & Hwa-Froelich, 2003). The PAR approach is especially relevant in post-conflict countries such as Timor-Leste, where according to the World Bank’s World Development Report (2011), these countries can take up to three decades to move away from their fragile state (World Bank, 2016) and often experience repeating violent periods (Brooks et al., 2011).

As discussed in Chapter Three, Timor-Leste is one of the world’s newest nations, however it is also one of the poorest. Seventy-three percent of the population lives in rural settings (Statistics Timor-Leste, 2016) and 42% of the population is living below the poverty line (Wallis & Thu, 2013). In 1999 about 70% of the country’s economic infrastructure was destroyed by the Indonesian military and 300,000 people were displaced (CIA, 2017). For over a century coffee has been the most important cash crop for farmers in the highlands, and accounts for approximately 80% of Timor-Leste’s export earnings excluding petroleum (Khamis, 2015).) With such high poverty rates it is important to understand the coffee industry from the perspective of the grower at a household level to obtain baseline data. Members of the agricultural community (including coffee growers, the Minister for Agriculture, Ministry of Agriculture and Fisheries staff and East Timor Coffee Institute staff) in Timor-Leste asked the question ‘Is coffee a good crop for Timor-Leste households to grow and harvest from?’ From this the **Timor-Leste Coffee and Poverty Project** was developed through the participatory action research approach.
4.2 Why action research?

There are risk factors in settings where research is conducted in communities where disempowerment is prevalent which can add the factor of power dynamics. There is a tendency for social research to be carried out “on the relatively powerless by the relatively powerful” (Bell cited in Gibbs, 2001). Action research allows researchers working in international development to temper their outsider status by engaging in collaboration with insiders where action is central to the research. When doing action research it is also important to consider positionality (Herr & Anderson, 2005) because how action researchers position themselves, in relation to the setting under study, will determine how challenges of power relations, research ethics, and the validity of the study’s findings are addressed. Action research is typically grounded in the ideals of ethics and social justice in order to produce improvements in the quality of life in specific social settings (Salkind, 2010) and has been used extensively in the field of agricultural research (Bawden, 2016).

In the case of the Timor-Leste Coffee and Poverty Project the action was to create empowerment opportunities, with the main action to give power through usable knowledge to district and Aldeia leaders to manage their own people, rather than relying on outside organisations or the government. It was also to share power with lecturers at the National University of Timor-Leste (UNTIL) to be able to conduct projects themselves and guide culturally appropriate research rather than just be a “consultant” on an international project that requires a translator. Therefore an action research approach was selected for this case study in Timor-Leste to maximise the input and knowledge from communities, together with technical knowledge from key informants with varying perspectives and links to the coffee industry. Strategies used and modified were common to the field of participatory action research.

Action research can be difficult to define. Herr and Anderson (2005) consider that most researchers however will agree on the following definition: “action research is inquiry done by or with insiders to an organisation or community, but never to or on them.” Action research is orientated to some action or cycle of actions that organisations, or in the case of this thesis, community members have taken, are taking or wish to take to address a particular problematic situation (Herr & Anderson, 2005). The idea is that changes occur either within the setting and/or to the researchers themselves with research done by collaboration with others who have a stake in the problem being investigated (Herr &
Anderson, 2005). Action research allows for a flexible collaborative approach to be taken in the management of a research project (Dick et al., 2015). Collaboration for insiders can involve outsiders with relevant skills or resources, though most agree that the perceived need for change should come from within the setting (Herr & Anderson, 2005). Grant, Nelson and Mitchell (2007) specifically emphasise “the importance of researchers being reflexive and responsive to community needs through the willingness to share and cede power.” Therefore the Timor-Leste Coffee and Poverty Project engaged the agricultural community in Timor-Leste at multiple levels from the coffee growers, through to educational institutes and government to inform each stage of the research and direct how to approach subsequent cycles in this process and build in empowerment opportunities.

According to Herr & Anderson (2005) there is more writing about action research than documentation of actual research studies because those who engage in action research projects are often more interested in generating knowledge that can be fed back into the setting under study than generating knowledge that can be shared beyond the setting. Therefore in the case of the Timor-Leste Coffee and Poverty Project, and the discussion of the role that PAR plays in providing opportunities for empowerment as influenced by the concepts raised in PDT, it was important at all stages to consider how the knowledge generated would be utilisable by those in the setting and also generalisable and transferrable beyond the setting. This thesis discusses a participatory action research project so it can be used as a case study of not only the product, but also the process of the collaboration for other researchers working in LEDCs, particularly those post-conflict.

Numerous challenges face researchers engaging in research where an interdisciplinary approach is required to undertake research in a community and work collaboratively (Cummings & Kiesler, 2005). The Timor-Leste Coffee and Poverty Project addresses two of these challenges, firstly with the selection of the research approach of PAR and secondly, with the selection of collaborative methodology techniques for training and data collection suitable for a case study on the socio-economic dynamics in the Timor-Leste coffee industry. Working with others to achieve goals and to gain access to resources, are basic to empowerment (Perkins & Zimmerman, 1995).

To meet the first challenge a methodology needed to be selected that was flexible enough to incorporate multidisciplinary perspectives, however rigorous enough to enable effective data collection and analysis for both the quantitative and qualitative data that were being
gathered. Action research is by its nature an analytical and theory building process based on going through a series of cycles of knowledge development and reflection to assist in the development of action plans (Salkind, 2010). It provides a framework for the necessary development of common epistemology ground among disciplines which also assists when working in a cross-cultural context. The strength of this approach also comes from the flexible framework as an overarching method that allows the researcher to employ a range of other tools (Dick et al., 2015). The second challenge in this interdisciplinary research was in the selection of the methodological techniques for collecting the data. Through the action research process household surveys were adapted and changed, however the final version was still constructed carefully to ensure academic rigour.

Researchers working in LEDCs, and specifically Timor-Leste acknowledge that change and adaptation are required skills and practises (UNDP cited in Friday et al., 2006). Action research as a methodological framework is useful in such studies where change may be required, where all the knowledge for change does not exist at the start and can only be developed progressively through further research and critical reflection. Therefore action research often begins, as was the case for the Timor-Leste Coffee and Poverty Project, with a concern or problem rather than a gap in the literature (Dick et al., 2015).

4.2.1 Moving towards participatory action research

Participatory action research is a further extension of action research. Marshall and Reason (2007) suggest that in the development of inquiring practice in action research, more emphasis should be put on framing processes and making them flexible to ensure participation can generate the best quality of knowledge and that research is an emergent process. A measure of quality of action research according to Reason (2006) is based on how the researcher goes about making choices and their articulation. It is therefore necessary to monitor the process and assess the level of engagement of participants, as well as be able to withdraw quality and informative knowledge, and then reflect and use this knowledge. Therefore a reflective journal was kept by the researcher and engagement of participants was captured through surveys and discussions.

Some of the challenges participatory action researchers have been faced with include the lack of control over the process and outcomes of the research due to the collaborative nature of the research. It was noted by Baskerville (1999) that when a researcher hopes to
follow a defined problem, which can be the case for example for an industry funded project, the theoretical emergence may totally change the direction of the research, and due to the ethical responsibility to follow the study through, it may be in a field where the researcher and funding body are not comfortable. Therefore community expectations need to be addressed in the project planning stage as a risk management strategy.

Additional challenges with PAR that have been recognised include the five key ones discussed by Grant et al. (2007):

1. Building relationships where specific challenges might include “community mistrust of outside researchers” and “inadequate preparation/training of researchers.”

2. Sharing power, where specific challenges may be that the “researcher is generally in a position of power relative to community members” and that the “researcher may be reluctant to acknowledge and share power.”

3. Encouraging participation, including the specific challenges of “barriers to participation,” “varying levels of commitment,” “organisational challenges,” and “feelings of exclusion or intimidation.”

4. Making change including the specific challenges of “differing definitions of needed change,” and recognising that “change and PAR are often a slow process.”

5. Creating credible accounts where specific challenges including that the “researcher’s interpretations may be privileged,” that the “researcher’s ‘generalisable’ may subjugate community’s local knowledge” as well as a “lack of continuity of participation.”

4.2.2 Participatory action research cycles

Seven research trips to Timor-Leste were undertaken by the researcher from 2009 – 2013 totalling over six months spent cumulatively in Timor-Leste. The participatory action research cycles presented in Figure 3 are based around the activities that took place in this study through these research trips that involved the following stages of plan, act, observe, reflect (Salkind, 2010). This cycle of activities forms an action research spiral in which each cycle increases the researcher’s knowledge of the original question or problem and it is hoped, leads to its solution (Herr & Anderson, 2005).
These participatory action research cycles (PARC) illustrate where the research process initially began and the data acquisition process started taking place. The processes of each PARC are illustrated in more detail throughout Chapter Five. The deliberate actions (planned and executed) yield outcomes at each stage as research experiences which in turn become data. The literature review in Chapter Two draws from other researcher’s experiences that also serve as data for this research.

The activities of plan and act mainly revolve around the research trips. The planning stage involved developing a plan of action to improve what was already happening and the act was implementing that plan i.e. conducting household surveys. The activities included initial research meetings, conducting training, conducting the household surveys, interviewing actors/stakeholders, and gathering feedback from communities.

Figure 3: The five participatory action research cycles and corresponding research trips

4.3 Embedded methods within the participatory action research framework

There are six layers to the research conducted and presented in this thesis. The overarching approach is one of participatory action research with a focus on the case study of the Timor-Leste Coffee and Poverty Project. A mix of quantitative and qualitative embedded methods were used throughout the case study project including household surveys, interviews, research participant training, and reflection (Figure 4).
4.3.1 Using case studies within a participatory action research framework

The PAR approach is suitable for doing research through case studies due to its reflexivity and adaptive response as well as allowing for time required to develop relationships and understanding of the communities being studied (Bergold & Thomas, 2012). The Timor-Leste Coffee and Poverty Project case study was embedded within the PAR framework to examine the Timor-Leste agricultural communities’ question, ‘Is coffee a good crop for Timor-Leste households to grow and harvest from?’ and to then further reflect on this research process within the specific context of a post-conflict LEDC. Therefore the Timor-Leste Coffee and Poverty Project case study will address thesis research question 1, ‘what role is coffee playing in the development of Timor-Leste households?’ Producing contextual knowledge is a stated benefit of a case study research approach (Yin, 2003).

According to Yin (2003) case studies are the preferred strategy when 'how' and 'why' questions are being investigated; especially when the focus is on contemporary issues within some "real-life context", as is the case for development in Timor-Leste. The case study approach is a common strategy in geography, psychology, sociology, political science, social work and community planning.
Case studies can be a very powerful form of research, as emphasised by Gillham (2000, p. 101):

“The meticulous description of a case can have an impact greater than almost any other form of research report. This potency is reflected in the impact of single cases that are not research at all, but the subject of investigative journalism or judicial inquiries...”

According to Yin (2003) there are still many researchers who view case studies as a less desirable form of inquiry than approaches such as experiments or surveys as they question whether this approach is rigorous enough, if generalisations from the case will be valid and that case studies can take too long and the resulting document will be too large and unreadable. While some of these questions may have been applicable to some past case study research, the nature of case studies has been evolving.

Timor-Leste is an interesting case study for the investigation of coffee and poverty due to its position as one of the world's newest, yet poorest nations with 45 000 households relying on coffee to contribute to their household income and 25 000 of these relying on coffee as a sole source of income (Amaral, 2003; Old & Santos Cristovao, 2003). With such high poverty rates it is important to understand this industry from the perspective of the grower and thus obtain insights into how household incomes can be improved with the limited resources available. This triggered the method of household surveys for coffee growing households. Research outcomes could then inform recommendations on improved policy in the coffee sector of Timor-Leste and also inform other agroforestry initiatives. More specifically, research outcomes could be used to benefit the individuals and communities involved (Angeles, 2005).

4.3.2 The coffee growers household surveys

Household surveys were conducted to obtain baseline data on coffee growers for the Timor-Leste Coffee and Poverty Project. According to Schmink (1984), household studies can provide a bridge between microeconomic approaches which focus on the behaviour of individuals and the broader historical-structural approach of political economy. Household surveys allow for the study of family enterprises within the context of the household, in relation to labour supply, risk sharing, enterprise start-up, and asset formation (Vijverberg, 1992). In agricultural production research, the household is often
used as a frame of analysis because it is considered the main production, consumption, and
decision-making unit (Barlett, 1980).

It is difficult to define what constitutes a household since it is debatable, and not a
naturally occurring unit for analysis. Wilk explains;

“While in every society a household like group or thing can be found, in each place
it performs unique mixes of activities and functions. Even in the same small
community, each household can appear different: some may be cohesive, some very
diffuse; some will be involved in production, others will not. There are, in fact, no
universal functions” (cited in Sick, 1993).

The basic definition of a household unit given by Schmink is “a co-resident group of
persons who share most aspects of consumption drawing on and allocating a common
pool of resources (including labour) to ensure their material reproduction” (Schmink
cited in Sick, 1993). This definition guided the way that households have been classified
for the Timor-Leste Coffee and Poverty Project as units of analysis in a similar manner
as Sick (1993) when researching coffee production in Costa Rica. This research followed
the same amendment of this definition as Sick (1993) has, where households are not
presented as isolated or uniform social units, harmoniously pooling their resources under
the direction of an assumed male “head.”

However the need for comparison requires that households be classified and analysed as a
unit throughout this project. The considerations that led to the definition of a household for
the purposes of analysis were persons currently living in the household and contributing
financially or relying on support of those who lived outside the household for work or
study but still made financial decisions based on their household unit.

Sampling occurred within the district of Ermera based on a stratified sample with a semi-
random selection of clusters (defined by Sucos). A semi-random selection of a sample of
households within each cluster was then performed based on households in that Suco that
had agreed to answer survey questions after the Suco and Aldeia heads had informed these
communities that this survey was being conducted. However, due to the need to avoid
areas of potential risk (due to in-country safety concerns) the selection of areas could not
be completely randomised, so when necessary, representative communities were chosen in
safer locations. The final survey areas were confirmed in collaboration with the Timor-
Leste survey team. The sample comprised of 825 households, with information collected on 5334 individuals.

**Spatially referencing the household surveys**

In the initial project development the use of Geographic Information Systems (GIS) was intended to add an important dimension to the analysis of rural production and livelihoods. As was featured in the 2009 World Development Report, geographic location and spatial characteristics of an area have a vital impact on productivity, and accessibility to markets is a key determinant of economic returns to production. Likewise, household welfare can be affected by spatial characteristics of the household’s location, for example distance from services and opportunities for alternative employment or training.

During the household surveys a Global Positioning System (GPS) location point was recorded for households so that they could be revisited for the second round of surveys and be analysed spatially using GIS. Data obtained from the household surveys, GPS and other available spatial data layers was to be linked in the GIS. The GIS based analysis would be conducted to investigate how location based factors influence through GIS functions such as overlay, clipping, buffering and interpolation in a similar approach to that of Thongdara, Samarakoon, Shrestha & Ranamukhaarachchi (2012). The spatial structure of the data would also be analysed based on the random effects models used in Swinton (2002) as it is particularly suited to spatially referenced survey data. This aspect of the **Timor-Leste Coffee and Poverty Project** unfortunately did not eventuate as expected due to complexities surrounding reification of concepts where the GIS maps that could be produced contained inaccuracies (which will be explained further in Chapter Five) and as a result is outside the scope of this thesis. GIS training however was identified as an important element for capacity building and therefore this was targeted during the project.

**Participant sampling**

All sampling took place without the one district of Ermera as it is the main coffee growing district in Timor-Leste. Sucos were then chosen through a random selection and only modified if that Suco was deemed unsafe. The final selection of each sample within the Sucos depended on each participant’s availability at the time the surveys were conducted. There was one survey team for each of the five sub-districts of Ermera and each team surveyed three to five Sucos within that sub-district. Random-sampling occurred to determine which households to survey within the individual Suco. If the household head
(first preference was given to the household mother to answer however the household father was accepted as well) was unavailable in the time-frame that was allocated to that Suco another household was randomly selected to take its place from households who had acknowledged they were willing to participate.

The sample involved choosing a random subset of four to six Sucos from each of the five subdistricts of Ermera and then sampling approximately 20 households within each Suco. Each household was visited twice in 2011, the first time in February before the coffee harvest, and the second in August/September, just after the conclusion of the annual coffee harvest. Sample size and sample selection are important considerations when designing any survey. The sample size will determine the precision of an estimate, or the likelihood that a survey estimate represents the true value in the population. Based on a confidence level of 95% and confidence interval of 3.5, for a population of total coffee households in Timor-Leste of 45 000, a sample size of 771 was required. While the final survey was only implemented in the district of Ermera, it was decided to keep the sample size aim of 771 due to the high possibility of numerous surveys containing incomplete or unreliable data.

**Survey design**

“Multitopic household surveys have become an indispensible instrument for understanding development. Developing countries, without adequate household survey data, are forced to make policy decisions in an environment with many blind spots, where crucial information can be seen only dimly or not at all” (Lyn Squire cited in Grosh & Glewwe, 2000).

Household level surveys for the main study of the **Timor-Leste Coffee and Poverty Project** were developed based from lessons learned from a pilot study conducted in 2009 and discussed in Chapter Five, Participatory Action Research Cycle One. The pilot study was originally designed to allow comparisons with previous household surveys including studies including the World Bank’s Living Standards Measurement Study survey program and the United Nations Household Survey Capability Program in order to allow validation of data collected. The survey was then modified to target specific research questions identified in the development of the project.

The questions in the household surveys were mainly closed ended. Selected main questions led to further questions which included both closed and open-ended questions to obtain more detail. The surveys were designed to have simple non-intrusive questions at
the beginning and then progress to more personal detailed questions towards the end such as those concerning income and expenditure details. The surveys took between 30 minutes and one hour for respondents to complete with the Timorese research team filling in the responses.

There are many reasons to use closed-ended questions in surveys and questionnaires (Berg, 2009; Clough & Nutbrown, 2002; Grosh & Glewwe, 2000; Kerr, Hall, & Kozub, 2002). The responses are more easily analysed as answers can be given a number or value, therefore they are better suited to computer analysis than open-ended questions and thus could be analysed using a standard statistical package, in this case, SPSS Inc Version 19. They are also more specific, and as a result, similar meanings can be obtained and compared. Additionally, closed-ended questions take less time for both the interviewer and participant to complete. All of these considerations were important for this research project, especially since results had to go through a translation process and it was important to minimise the potential or misinterpretation that could occur through this process.

**Conducting the survey**

Due to the vast number of surveys occurring in Timor-Leste, especially by “outsiders” and the language barriers that existed, it was deemed most suitable for reasons including language barriers, accuracy and cultural sensitivity for only Timorese researchers to conduct the surveys and be in the field. Each of the five research groups also had at least one member that was from that sub-district. The Timorese research team were comprised of staff and students from UNTL and staff from the Ministry of Agriculture (MAF) with staff from Southern Cross University and Monash University providing overall direction and support, including the researcher throughout all stages of the project.

Some coffee growers expressed concerns when first approached that the research was connected to the Timorese government and asked if the survey would be used in relation to the next election and for political reasons. It was explained that this was an academic study that was being conducted by Southern Cross University and Monash University in Australia with the assistance of UNTL to learn about the Timorese coffee farmers and the issues they may be experiencing in producing and marketing their crop. It was also explained that any government members that were in the field with UNTL were there to assist the university led study and that they were there as they had contacts such as
extension workers or district heads and knowledge of the sub-districts that was necessary to complete the survey. It was stressed however that they were there in an unofficial capacity to assist the academic research. It was also emphasised to the research teams that while informal conversation between survey participants and the research team was acceptable and even encouraged, that no political conversations were to take place.

Due to low literacy rates the Timorese research team members filled in all answers and explained all questions to the surveyed households. These concerns were based on information that the literacy rate of the total population of Timor-Leste (age 15 and over) is only 58.3% (UNICEF, 2013) and discussions with the Timorese research team leaders. The literacy rates in rural areas, i.e. the study area would be expected to be even lower. This approach worked for consistency and efficiency reasons as well and allowed for discussion over specific question meanings so the data collected would be consistent and accurate. It therefore meant that the training of the Timorese research team to clarify specific question meanings and to reinforce the need for objectivity in recording and leading responses was essential. The training process is discussed in detail in Chapter Five.

**Analysis**

The statistical analysis undertaken on the resulting dataset from the household surveys refers only to the sample’s characteristics within the district of Ermera and does not claim to represent national patterns. All statistical analyses were performed using SPSS for Windows (SPSS Inc Version 19). Key findings that relate to the PAR approach will be discussed including pre and post survey implementation discussions. These will be presented and discussed in terms of cultural and research development in Chapter Five and additional findings will be presented in Appendices as directed in Chapter Five.

A number of factors led to this decision with the approach to data analysis and presentation:

1. During survey debriefings a number of team leaders commented that households sometimes appeared to give misleading information. One example from the Railaco team included a household stating that the household had no livestock when in fact they did. During the debriefing session after all surveys were handed back to the Australian research team this type of occurrence was noted by a number of the research teams. The theory they put forward was that people know that there is funding for certain projects in Timor-Leste and sometimes there is the belief that by making yourself or your
community appear poorer than you may receive some of the funding or new project initiatives. This made the explanation of our research as knowledge focused rather than new initiative outcomes focused a very important aspect.

2. Due to the nature of a participatory action research approach to this project the development of the thesis discussing the processes that occurred and focusing on providing context as is valuable for case study reason, it was deemed that while the household surveys have been explored for a research report and will be further analysed for peer reviewed journals, the discussion in this thesis should be more focused on the role of the researcher and the role of participatory action research for providing empowerment opportunities when conducting research in LEDCs.

Data was examined first by correcting any errors, coding and labelling variables and then by inspecting basic frequencies. The next level of detail was examined by performing crosstabs and non-parametric statistical tests, as the data did not have a normal distribution, to determine any existing relationships in the data, or identity differences between groups of data.

4.3.3 Interviews

Interviews are very frequently used for data collection in participatory action research (Bergold & Thomas, 2012). Qualitative interviewing is a way of discovering what people feel and think and why people do what they do (Rubin & Rubin 1995). When specific information is required a semi-structured format is used (Merton, Fiske, & Kendall, 1990). The interviewer introduces the topic, then guides the discussion by asking specific questions. Interviews were set up with the following format in mind; introduction, encourage, show understanding, get facts, ask difficult questions, tone down, close and maintain contact. Conducting interviews in a cross-cultural setting added complexity to this process, so lessons learned from Liamputtong (2008) contributed to guiding the process of being culturally sensitive and being aware of language and ethical issues while conducting the research. These considerations are explored in more detail later in this chapter and throughout Chapter Five. The interviews that took place for this research were with key informants; people who can speak about the research setting and how things work rather than just his or her own experiences. Interviews were made by appointment in most cases, especially for government officials and often re-scheduled many times due to
availability of the key informant. Other interviews were at times arranged informally and
conducted when the opportunity arose in the field; these interviews relied on the use of
general thematic question areas to guide the interview process. These were the same
thematic questions that were used to design specific questions for the interviews by
appointment.

Informants were chosen based on a number of factors. These included:

1. Relevance to research project, knowledge of particular aspects of coffee production.
2. Availability during the research period.
3. Informants involved with different aspects of coffee production that may have
differing perspectives.

Key informants included people involved with CCT, government ministers, aid
organisations, academics and coffee farmers in Timor-Leste. This was in order to obtain a
range of opinions and views of similar issues within the coffee industry, to see if there
were similar or differing goals, ideas for the future of coffee and opinions on what could
and should be improved. Data from the interviews was clarified where possible if
meanings were not clear. Complete interview transcripts were sent to the interviewee
(when requested) to confirm they were satisfied that the information they had given,
reflected the information and opinions they were trying to convey.

4.3.4 Training for capacity building

Using training for capacity building in developing countries is not new and has been used
widely for example to improve remote sensing research and education (Haack & Ryerson,
2016); heath and professional development in general (Swantz, 2008). An important part
of the methodology and Timor-Leste research project was how the training program for the
Timorese research team was developed. Training was seen as important not just for
conducting the household survey but also for improving skill sets and general capacity for
interpreting existing data such as the use of GIS. While the training program design,
implementation and effectiveness will be discussed in more detail throughout Chapter Five
there were a number of factors that had to be considered in the initial phases which will be
discussed here.
Language

Language was a consideration from the inception of the Timor-Leste Coffee and Poverty Project and can cause a number of challenges when working in Timor-Leste. From the lessons learned in the pilot study (discussed in Chapter Five: Participatory Action Research Cycle One) it was found in order to devise the most effective survey that the survey would initially be written in English and discussed for validity of questions. Then translated by one UNTL lecturer into a mix of Tetum, English, Bahasa Indonesia and Portuguese as appropriate, and then retranslated back into English by another lecturer to validate the question meanings. These two lecturers then work together to perfect the translated document. Then during the training, discussion continued with the Timorese research team having both the English version and translated version and corrections, additions or improvements were made as necessary. This also meant that all interviewers were very familiar with each question and its intended meaning which improved the success of accurate data collection.

Timeframe

It was decided the training for each round of surveys would take place directly prior to the survey process being implemented in the field. The first round of surveys had four days of training taking approximately five hours per day. The second round took two days. The change in time taken for the second survey was due to two reasons, firstly that many of the skills had been learned for the first round already and secondly debriefing had to occur again and lessons learned for the second round.

Physical Resources

As many institutions find even in the developed world, resources for training are often scarce. These challenges were exemplified by conducting this project in Timor-Leste. An adequate training space needed to be hired which involved hiring a room at East Timor Development Agency (ETDA), an independent, not-for-profit training centre in Timor-Leste. The Australian research team brought laptops and a projector, as well as power adapters in case ETDA did not have enough. It was also important to establish contact with a reliable printery to quickly print revised and final surveys. Clipboards, pens and other resources, were also required and where possible were purchased in Timor-Leste to put money into the local economy. Challenges existed which will be discussed in more detail in Chapters Five and Chapter Six.
4.3.5 Reflection

Developing the capacity for critical reflection has been recognised as essential for students in higher education and adult education in general, especially where “transformative learning” is an explicit goal (Brookfield, 1995; Mezirow, 1990). Reflective individuals have certain characteristics: open-mindedness, a willingness to accept intellectual responsibility for one’s own views, wholeheartedness (i.e., a willingness to face fears and uncertainties), and enthusiasm (Dewey, 1933). Literature on reflection, developed from Dewey’s ideas and drawing on the pioneering work of Donald Schön (1983, 1987) focuses primarily either on adult learning (Boud, Keogh, & Walker, 1985; Brookfield, 1995; Mezirow, 1990) or is concerned with reflection in relation to practices and actions.

As Healey and Jenkins (2009) argue, and as is valued in this research, undergraduate-involved research switches the focus to the student as learner and potential producer of knowledge. Passionate academic support, leadership, and mentorship from faculty researchers are critical to effective student involvement. In field settings, the student-professor relationship is also inevitably changed, and this may also help mitigate some of the identified gaps between research and teaching (Robinson et al., 2013).

Reflection in action research and academia as a whole is different from isolated, spontaneous reflection in that it is deliberately and systematically undertaken and generally requires that some form of evidence be presented to support assertions (Herr & Anderson, 2005). However, what constitutes evidence, or in more traditional terms data, is still being debated (Herr & Anderson, 2005). Bergold and Thomas (2012) suggests “four focuses or types of reflection from which techniques and instruments can be derived that can facilitate reflexivity on the part of researchers:”

1. Reflection on personal and biographical attributes and dispositions;
2. Reflection on social relationships among the research partners;
3. Structural reflection on the social field of the research project;
4. Reflection on the research process.

Research field notes were mainly written as reflective journal entries during the researcher’s time in Timor-Leste. They included reflections on how the training workshops progressed, observations on the Timor-Leste Coffee and Poverty Projects’ progression...
and interviews with key informants. Journal entries mostly consisted of head notes and scratch notes. Head notes are, “memories or mental notes kept...until such a time as it is possible to actually write things down” (LeCompte & Schensul, 1999, p. 31) while scratch notes are jottings written down as soon as possible after an event when it is not appropriate to do so during the event. Schön (1983) presented the concept of ‘reflection in action’ and ‘reflection on action’ when addressing reflective writing and thinking. From these two types of reflection, head notes could be described as being ‘reflection in action’ since they are taken during the event, and scratch notes could be described as ‘reflection on action’ since they are written down as soon as possible after the event. The field notes describe what events were taking place, provide an account of the challenges as observed by the researcher and detail the thought processes and events that occurred to shape the next phase of research. These notes were then used to create personal reflective documents that became part of the participatory action research cycles.

4.4 Cross-cultural considerations

Cross-cultural research contains many advantages and challenges that need to be explored before the research process begins and then constantly throughout the process. The need for constant reflection and action makes participatory action research as a process for managing research in these settings a critical component to success. It is important to acknowledge the researcher’s background as English speaking from an Australian rural setting; this was a different cultural context to the Timorese research team and participants. Despite the researcher’s experience of multiple research trips and experiences in Timor-Leste collectively totalling over six months and local language skills developed through participating in a Tetum language course and engagement with the community, difficulties in communicating across cultures of course still presented themselves. As Drysdale (2007) highlighted from her experience in Timor-Leste, “foreigners for the foreseeable future will be malae,” the Tetum word for foreigner which Kirk explains is the nature of living and working in Timor-Leste (cited in Drysdale, 2007). Therefore is was necessary to recognise and respond to these challenges while developing the research methods and conducting the in-country research training and fieldwork.

Understanding the culture in any cross-cultural setting is important. It was felt especially important for this research as there were the two added dimensions of the country being a
LEDC and also being a post-conflict nation. These factors increase the vulnerability of the community and also increase the need for the research to be collaborative in nature where possible to ensure additional goals such as capacity building and empowerment can be met.

It is the role of the researcher to focus on appropriate methods to invite individuals to participate in research. In the case of the Timor-Leste Coffee and Poverty Project, two different groups had to be considered, those who participated as part of the research team and those who were invited to complete the household surveys. The building of the Timorese component of the research team began through initial formal meetings with MAF and UNTL. These formal introductions were arranged through already known contacts and thus a strong foundation for the network kept building. East Timorese people are more likely to respond favourably if you are connected to someone they know (Drysdale, 2007). The formal introductions involved an arranged time to be made, the mutual contact to be present and written material of relevant work brought to the meeting so that an understanding of the skill set the Australian team brought and intention of the forthcoming project was clear. Effort was also made to understand the backgrounds, skill set and aspirations of the person or group being met and notes were taken of these so that they would not be forgotten. Those whom were met had made the effort to set up a formal meeting space with refreshments and often gave a Tais to each member of the Australian Team as a welcome to Timor-Leste and their institution. Once formal introductions had been made it was found that subsequent meetings had a much greater information exchange and that the foundation was present for ongoing trust to be built.

At all stages of the research project it had to be determined whether a formal or informal approach would be most appropriate. These decisions were made in close collaboration with the Timorese team leader who has been referred to throughout this thesis as the project ‘champion’. To conduct the household surveys a formal meeting was held with the Ermera district administrators; after permission had been granted at this level, information letters (written in Tetum) were sent to sub-district and Suco leaders to also inform them of the research and seek permission. The approach was then changed from formal, to informal by the Timorese research team when approaching individual households to be surveyed. It was known that there were low rates of literacy throughout Timor-Leste so written information sheets and written consent were not used with the surveyed households. Instead the Timorese researchers took time at the beginning to explain
verbally the research background and objectives and obtain verbal consent, whist also explaining the ethical guidelines that included participants being able to opt-out of individual questions or the entire survey at any time. It was also explained to household participants that results of the research would be distributed upon completion at a community meeting where participants and Suco heads would be invited to attend and discuss the survey results.

To ensure that the research methods were both culturally appropriate and robust, the pilot study was designed in close collaboration with ETCI based on questions and concerns that coffee producing households and community leaders had brought to the attention of ETCI. The survey draft had been constructed in Australia based on this information and further research, and then finalised from feedback and insights that were gathered from both participants and staff from ETCI who assisted in the data collection process. The two rounds of household surveys for the **Timor-Leste Coffee and Poverty Project** were then based on further literature reviews, lessons learned from the pilot study and collaboration with UNTL academic staff during the initial research preparation periods, with further modifications made based on group discussions during the training sessions for the survey implementation. These continued discussions and modifications not only improved the quality of the surveys, but also the cultural appropriateness. It also served as a continuous activity that all members of the research team, both Australian and Timorese could contribute to and therefore strengthened the team throughout the process.

### 4.5 Ethical considerations

During the **Timor-Leste Coffee and Poverty Project** all household survey respondents were informed that the study was for the purpose of obtaining accurate information on the coffee sector in Ermera and that while the results would be presented to members of the Timor-Leste government there was no agenda in place for how the results would be used. Participation in the research was clearly 'opt-in' and those households wishing to not participate were under no pressure to do so. Due to the high levels of illiteracy in the study area a project information sheet was provided to the Timorese researcher asking the questions, to explain the project and obtain verbal consent to participate in the research. Participants were informed that they were able to opt-out at any time and that if they were not comfortable answering a question that they were not required to. It was also explained
to participants that their answers were to be looked at by the Australian research team and that individual responses with identifying information would not be made available to any other parties.

Risks were an important consideration when designing and implementing the research and seeking ethics approval. After undertaking a risk assessment, it was determined that the possibility of risk or harm to the participants in this research would be low when assessed against the National Statement on Ethical Research - where 'low risk research' describes research in which the only foreseeable risk is one of discomfort. The survey questions were designed to be unobtrusive with participants being made aware that they had the option to not answer the question at any stage. It was identified that some issues, unrelated to the core of this research, may be emotive for some participants e.g. issues from occupation and subsequent land tenure issues that still exist today, and for some there was concern of losing their lands to former Portuguese landlords if the incomes reported were considered high. Some participants may also have suffered negative psychological effects as a result of the Indonesian occupation in the study area. These factors were considered at all times during the ‘face-to-face’ surveys and were also a consideration for the duration of the research period as detailed in the next chapter describing the training of interviewees.

It was important to include identifying information on the surveys, as there were two rounds of household surveys conducted months apart and it was crucial to be able to locate the precise household and family member who completed the survey in the first round for the second round. Once the data entry was complete in excel, household member names were replaced with identification numbers. GIS locations were also removed since the data collection was finished and it had been decided at this stage to remove the element of GIS data analysis from the thesis (justification for this will be discussed later in Chapter Five).

When conducting any research it is important to consider who, if anyone, will benefit from the research being conducted. The Timor-Leste Coffee and Poverty Project was conducted with three benefits in mind:

1. To participants: The expected benefit to participants is that the research will hopefully lead to improved decision-making on agricultural strategies and improved income streams for producers in Timor-Leste. Participants may also experience a sense of empowerment as their information and additional comments are being taken into account for future change.
2. To the broader community: The expected benefit to the broader community is the potential for increased economic and social development. Also the potential for the more effective use of resources in agriculture and coffee sector development. There is also the potential benefit that the community will feel they are being recognised and their concerns are being taken seriously.

3. To increasing knowledge: Less economically developed countries without adequate and accurate household data are forced to make policy decisions in situations where crucial information can be missing or not adequately represented (Grosh & Glewwe, 2000). Increased information can allow weaknesses to be identified and positive management solutions to be trialed and implemented.

As stated previously, it was made clear to participants that involvement in this research was strictly opt-in and that they could remove themselves from the research process at any time. A high dropout rate was prepared for, however during this project it was found that during the second round of household surveys, respondents were eager to participate again and have the chance to be heard. During the second round of surveys during the planning, additional time was factored in for each surveyor to spend at each household to listen to concerns and stories as it was found in round one that participants did not want to stop talking. However, it was made very clear to participants at the start of both rounds of surveys that while it was hoped there would be outcomes from this research, there was no guarantee that this would eventuate as the focus was on gathering accurate information. It was also important to make the process as collaborative as possible as part of the engagement and empowerment strategy, and to make sure the research would be accurate and culturally appropriate and relevant. Therefore UNTL was engaged from the very beginning of the research which included staff that had helped with the pilot study.

4.6 Summary

Chapter Four outlined the overall research design and methodology of this thesis and the rationale for the research project. The reason for using an action research, and more specifically a participatory action research approach was discussed and the embedded methods within this were discussed. This chapter has provided context for more specific methods to be discussed in the five participatory action research cycles in Chapter Five.
Chapter Five: Engaging communities in the Timor-Leste Coffee and Poverty Project - Participatory Action Research Cycles

Introduction to the participatory action research process

This chapter describes the evolution of five participatory action research cycles based around seven research trips, completed by the researcher to Timor-Leste, that were undertaken in order to conduct research into coffee producing communities in the district of Ermera (Figure 5). While each participatory action research cycle (PARC) is primarily focused around an individual research trip, the boundaries between the research trips and how they correspond to the next cycle is flexible, as some cycles, for example, finish with the beginning of the next research trip. This chapter expands on the methods used, that were outlined in the discussion of the overall research design and methodology in Chapter Four. The role that participatory action research (PAR) has played in the research is also explored, and how this fits within empowerment and concepts raised in post-development theory. The role of the researcher within this cross-cultural context is also explored with the aim to identify challenges and strategies for researchers to achieve research project aims and empowerment through engaging communities. Each participatory action research cycle concludes with a reflection on the tools used, empowerment themes raised and lessons learned at the three empowerment levels of individual, organisational and community (Perkins & Zimmerman, 1995) and outlined in a nested Venn diagram. These nested Venn diagrams provide a foundation for each new participatory action research cycle, to eventually build a complete picture of the Timor-Leste Coffee and Poverty Project. Chapter Six will discuss the conceptual model that has been developed from this project on the role of participatory action research for empowering communities in Timor-Leste.
Participatory action research was used during the **Timor-Leste Coffee and Poverty Project** to provide empowerment opportunities for the communities involved in this study. As discussed in Chapter Four, PAR is a further extension of action research. Participatory action research provides opportunities for co-developing processes *with* people rather than *for* people (McIntyre, 2008). Participatory techniques have been recognised as an effective way of undertaking research with marginalised groups often living in cultures very different from that of the researchers (Pain & Francis, 2003). Participatory action research is a self-reflective inquiry that also carefully considers power relationships, acknowledges the inequalities of power that exist (Mohan, 2006) and is concerned with the empowerment of participants of the research (Morford et al., 2004). It is the reflection on each PARC that initiates a new cycle in the PAR process, with recommendations for conducting the next phase of the research, together with challenges that have been identified during the PARC. In each PARC, the action research process of plan, act, observe and reflect is followed (Salkind, 2010). Within this structure there can also be considered four aspects as outlined by (Ruechakul et al., 2015); these being:

1. Create awareness
2. Specify problems or needs
3. Act
4. Present and reflect or monitor

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Figure 5: The five participatory action research cycles with corresponding research trips
The evolution in PAR is summarised at the conclusion of each PARC. As well as the formal, academic reflection included in each cycle, personal reflections are also included which particularly focus on the role of the researcher in the empowerment context of the PARC. These personal reflections are differentiated by the comic sans font that has already been previously used in Chapter One.

A synthesis of the findings from each PARC is presented in Chapter Six. This chapter will explore how the PARCs come together to develop the themes identified during the research process. Chapter Six will also explore the role of PAR in empowerment, through a proposed conceptual model based on themes and concepts that emerged during the PAR process.

Throughout the five PARCs, a number of communities are present. Presented in Table 1 is an overview of the eight communities that are specifically discussed in the following PARCs. For ease of reading the community that refers to the individual Aldeias (sub-villages) involved in coffee producing activities and the Aldeia leaders will be referred to as simply ‘Aldeias.’ Each individual PARC will also include a table of communities presented at the beginning of the cycle to outline the specific communities’ involvement in that PARC.

Table 1: Overview of communities involved in participatory action research cycles

<table>
<thead>
<tr>
<th>COMMUNITY</th>
<th>Role in Timor-Leste</th>
<th>Role/responsibilities in project</th>
<th>Additional information/history</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aldeias (Small communities, sub-villages)</td>
<td>Smallest level of administration in Timor-Leste</td>
<td>Coffee growers from this community were surveyed at the household level</td>
<td>There are 2336 Aldeias in Timor-Leste Local law often presides under the direction of the Aldeia leader</td>
</tr>
<tr>
<td>ALGIS (Agriculture and Land-use Geographic Information System)</td>
<td>Geographic Information System department within MAF</td>
<td>Research collaborators Surveyors Provided GIS data</td>
<td>Established in 2001 with support from Australian government Located at MAF in Dili Contributed to making basic spatial datasets and has capability of developing and analysing agricultural geographic data Staff need more training in GIS</td>
</tr>
<tr>
<td>ATT (Alter Trade Timor)</td>
<td>Timorese run small farmer cooperative</td>
<td>Key informant Developed parallel study to Timor-Leste Coffee and Poverty Project</td>
<td>Began in 2006, officially operational in 2008 Established with the goal to promote diversification rather than have the monoculture of coffee</td>
</tr>
<tr>
<td>COMMUNITY</td>
<td>Role in Timor-Leste</td>
<td>Role/responsibilities in project</td>
<td>Additional information/history</td>
</tr>
<tr>
<td>-----------</td>
<td>---------------------</td>
<td>----------------------------------</td>
<td>-----------------------------</td>
</tr>
</tbody>
</table>
| CCT (Cooperativa Cafe Timor) | • Largest single source producer of certified organic coffee in the world | • Enterprise Development Advisor was a key informant | • Operates under advisors from the National Cooperative Business Association (NCBA)  
• Established in 2000 from original NCBA coffee project started in 1994  
• Main office located in Dili  
• Provides extension and advisory services to cooperative members  
• Has had Fair Trade certification for coffee on and off  
• Has over 23 000 members |
| East Timor Coffee Institute (ETCI) | • Provides higher education in agriculture | • Assisted in original problem identification  
• Collaborators for pilot study | • Located in Gleno, the capital of Ermera  
• Previously known as ETICA – East Timor Coffee Academy |
| ETDA (East Timor Development Agency) | • Independent, not-for-profit training centre in Timor-Leste | • Provided location and staff assistance for training workshops | • Started in 1999  
• Located in Dili  
• Mission is to strengthen the capacity of the East Timorese people to play an integral, active and co-ordinated role in the development of Timor-Leste through training and job placement |
| Ministry of Agriculture & Fisheries (MAF) | • National Government level Ministry with a key role to encourage and assist farmers to improve livelihoods | • Research collaborators  
• Surveyors  
• Research approval and access to extension officers in Ermera | • UNTAET established MAF during the transitional period before independence with a skeletal structure that had no extension on a local level, no vocational or technical education in agriculture and only minor research capacity  
• Has been building capacity to respond to having started from a low base in 2002  
• Have agricultural extension officers in sub-districts, however heavily Dili centred |
A meeting was held with agricultural communities to discuss coffee production during an initial trip in 2007 and research was conducted between 2009 and 2013 over seven research trips (Figure 6) and includes the following PARCs:

1. **Coffee production in Timor-Leste Cycle (PARC 1):** The development of a pilot study to assess the viability of conducting research into the coffee production sector. Key informant interviews and household surveys were conducted during the latter part of the coffee harvest season in 2009 and the effectiveness of this research process was discussed.

2. **Capacity building for engaging communities in research cycle (PARC 2):** A geospatial training program conducted in 2010 in Timor-Leste for capacity building as well as collaborative relationship building with participants from UNTL and MAF.

3. **Pre-coffee harvest research cycle (PARC 3):** The training program for the Timor-Leste research team from UNTL and MAF and Household Survey Round 1 was conducted to obtain baseline data on social and economic conditions of households before the coffee harvest season in 2011.

4. **Post-coffee harvest research cycle (PARC 4):** The training program for the Timor-Leste team from UNTL and MAF and Household Survey Round 2 was conducted to obtain baseline data on social and economic conditions of households after the coffee harvest season in 2011.

5. **Reporting to community cycle (PARC 5):** The reporting back of results in 2013 to Timor-Leste government, industry organisations and the Ermera district community to facilitate discussion and gain further insights into the interpretation of results.
Figure 6: Timeline of research trips and milestones
5.1 Participatory Action Research Cycle One: Coffee production in Timor-Leste

In Participatory Action Research Cycle One (PARC 1) (Figure 7) the origin of the Timor-Leste Coffee and Poverty Project is introduced as well as the development of a pilot study that was implemented in 2009 to help assess the direction and feasibility of conducting the main study on coffee and poverty in Timor-Leste. This was achieved by following the plan, act, observe and reflect aspects of the action research cycle. The PARC 1 problem definition and cycle summary are outlined in Figure 8. The planning phase is covered by providing the background to the study, where awareness was created and initial ideas came from, and includes relevant literature on the problem definition. The action phase includes more detailed information on what methods were used and how these methods were implemented. The observation phase focuses on the preliminary results of the coffee grower surveys conducted as well as observations on the effectiveness of the methodologies used during the pilot research. Using self-reflection, the final phase of PARC 1 relates the role of PAR to empowerment as well as exploring the role of the researcher in this context. The first PARC concludes with insights that inform the next PARC thereby providing a link to the next stage of the research.

Figure 7: Evolution in participatory action research cycles, starting at PARC 1
Problem Definition:
Developing a pilot study to assess the viability of conducting research into community concerns regarding the contribution of the coffee production sector to the agricultural community of Timor-Leste.

5.1.1 Planning phase of the Timor-Leste Coffee and Poverty Project pilot study (Phase 1, PARC 1)
This section covers the planning phase of the Timor-Leste Coffee and Poverty Project case study which forms Phase 1 of PARC 1 (Figure 9). The communities involved in this phase are introduced as well as the origin of the Timor-Leste Coffee and Poverty Project from a community derived question. The significance of investigating coffee at a household level in Timor-Leste is also discussed. The communities involved in PARC 1 are outlined in Table 2.

Figure 8: Participatory Action Research Cycle One (PARC 1) problem definition and cycle summary

Figure 9: PARC Finder – planning phase of PARC 1, a pilot study for the Timor-Leste Coffee and Poverty Project
Table 2: Communities involved in Participatory Action Research Cycle One

<table>
<thead>
<tr>
<th>COMMUNITY</th>
<th>Role and/or responsibilities in project</th>
<th>Power dynamic and/or needs</th>
<th>Tools used/empowerment gained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australian Research Team</td>
<td>• Southern Cross University met with community members and conducted pilot study</td>
<td>• Seen as international expert with access to external funding</td>
<td>• Local knowledge and resources</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• In charge of research project</td>
<td>• Experience researching in Timor-Leste</td>
</tr>
<tr>
<td>ETCI</td>
<td>• Collaborated to translate and finalise survey</td>
<td>• Regional authority and gate keepers due to status of staff in community hierarchies</td>
<td>• Translation</td>
</tr>
<tr>
<td></td>
<td>• Implemented survey</td>
<td>(Dean was local member of Parliament and ETCI chair, the local traditional King)</td>
<td>• Survey training</td>
</tr>
<tr>
<td></td>
<td>• Helped translate survey responses</td>
<td>• Only accredited higher education facility outside of Dili</td>
<td>• Practice in field and survey technique</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Know some of the farmers might influence results as close to community</td>
<td>• Not good enough, training needs to be better</td>
</tr>
<tr>
<td>Aldeias</td>
<td>• Answer survey questions, give feedback if not clear (this did not happen)</td>
<td>• Smallest administration level</td>
<td>• Empowerment gained: status in community raised through engagement with international</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Under head of Suco, head of sub-district, head of district</td>
<td>authority as equals.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Low education, access to infrastructure</td>
<td>• Confidence and skill in undertaking local research</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Coffee plantations imposed</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Long history of being under colonial rule</td>
<td></td>
</tr>
</tbody>
</table>

Awareness building

As discussed in detail in Chapter Three, post-occupation Timor-Leste was an economically and structurally ruined nation when it gained its independence in 2002 (Lothe & Peake, 2010). One of the few established resources available to the nation apart from petroleum was coffee (Drysdale, 2007). In 2003 researchers from Southern Cross University travelled to Timor-Leste to investigate the issue of a disease that was damaging *Paraserianthes*
falcataria, the most common shade tree for coffee plantations in Timor-Leste (information on this disease and the outcomes has been discussed by Old & Santos Crisrovao (2003). It was identified during this research trip through informal discussions and observation that there were a number of other structural issues, both biologically and socially that needed to be addressed within the Timor-Leste coffee sector. Southern Cross University then assisted in the establishment of ETCI (at the time however it was established as the East Timor Coffee Academy and referred to as ETICA) by helping to negotiate donations for buildings and computers and assist with the curriculum design. Fourteen staff from ETCI were brought to Southern Cross University for training in curriculum development and worked through the Environmental Science School’s forestry program.

Follow up meetings in 2007 with the Minister for Agriculture, Estanislau Da Silva (2007-2009), MAF staff, Aldeia leaders and 200 coffee grower members of the CCT in Gleno (capital of Ermera) raised concerns about returns and cost of compliance for fair trade coffee. During these meetings questions were put forward from growers whether fair trade resulted in the best use of resources, how much growers were financially returning for hours worked, where the fair trade money was going, what resources did coffee growers have, what contributed to the hunger times and whether coffee was actually a viable income crop for growers in Timor-Leste. Therefore the impetus for this research came from the community as they were the ones who wanted answers to these questions with the Australian universities having the required skills to obtain the necessary funding in order for this research project to proceed. Collaboration between researchers at Southern Cross University and Monash University resulted in an AusAID research grant to investigate coffee production in Timor-Leste.

**Problem Definition**

Through the meetings in 2007 with coffee growers and ETCI staff in Gleno, the question had been raised, ‘Is coffee a good crop for Timor-Leste households to grow and harvest from?’ and in addition, specifically ‘Does certified coffee have the capacity to alleviate poverty for coffee growing households?’ and it was these community derived questions that led to conducting the Timor-Leste Coffee and Poverty Project to better understand the coffee production industry in Timor-Leste at a household level. The deriving of these questions was an important part of the community empowerment aspect of this research. Community empowerment, is more than just involvement, participation or the engagement
of communities, it is a process of re-negotiating power (Baum cited in Ruechakul et al., 2015).

Through this initial process by the research questions originating from the Aldeais rather than foreign researchers, they had taken back some of the power that had been lost to them over the colonial and aid driven past of Timor-Leste. As discussed in Chapter Three, coffee was originally planted during the time the Portuguese were in power (Nevins, 2003), then during the period of Indonesian rule, the Indonesian military were given control of the coffee sector (CAVR, 2005) with profits from the coffee often used to finance the occupation (Henriques, et al., 2012). Since independence, massive amounts of aid poured into the country with development programs undertaken (Lothe & Peake, 2010) and Timor-Leste being the focus of numerous research projects (Kingsbury & Leach, 2007; Loch & Prueller, 2011). Rather than being approached by the Australian researchers, the Aldeia community collaborated with the researchers through facilitated discussions with ETCI, and the power over initiating the research process was shared.

5.1.2 Action phase for the Timor-Leste Coffee and Poverty Project pilot study (Phase 2, PARC 1)

This section covers the action phase of the Timor-Leste Coffee and Poverty Project pilot study which forms Phase 2 of PARC 1 (Figure 10). The design of the pilot household survey is discussed as well as the first research trip conducted by the researcher. Training and implementation of the pilot study is also outlined.

![PLAN ACT OBSERVE REFLECT]

Figure 10: PARC Finder – action phase of PARC 1, a pilot study for the Timor-Leste Coffee and Poverty Project

Development of pilot household survey

A research trip to Timor-Leste was conducted by the researcher from the 3rd to the 31st of August 2009. The main objective of this research trip for the Timor-Leste Coffee and Poverty Project was to conduct a pilot study aimed at gathering baseline data on coffee farmer households in Timor-Leste, and was approved by the Southern Cross University Human Research Ethics Committee. The pilot study was required to test the effectiveness
of the research methodology before the main study was conducted to identify any difficulties that were not anticipated at the proposal stage of the research. Pilot studies are a very useful element to conducting a successful main study and provide insights by giving information as to whether the main study could fail, where there are issues in following research guidelines and whether the methods used are inappropriate (Teijlingen & Hundley, 2001). Conducting a pilot study also allowed the opportunity for the strengthening of working ties and relationships between Southern Cross University and ETCI, identified and built opportunities for empowerment into the research process, and enabled the researcher to gain first-hand experience and knowledge in Timor-Leste in the areas of coffee production, social development and research techniques for Timor-Leste.

This pilot study included a household level survey of coffee farmers in Timor-Leste, and interviews with key informants; these approaches were decided upon by the researcher with the plan to finalise the household level survey in collaboration with ETCI staff once in Timor-Leste. Household level surveys were decided on as an appropriate method as they allow for the study of family enterprises within the context of the household, in relation to labour supply, risk sharing, enterprise start-up, and asset formation (Vijverberg, 1992). In agricultural production research, the household is often used as a frame of analysis because it is considered the main production, consumption, and decision-making unit (Barlett, 1980). In relation to Timor-Leste this survey focused on household characteristics (e.g. number of rooms, assets, running water), levels of health and education, coffee-farming activities (e.g. harvest, processing, selling, quality) and income and expenditure. This baseline data was necessary to gather in order to give an indication of the situation at the time and to inform the next stage of the research process. It was envisioned that through household level surveys the information gathered would also be more meaningful and relevant to the Aldeia leaders to answer the questions ‘Is coffee a good crop for Timor-Leste households to grow and harvest from?’ and ‘Does certified coffee have the capacity to alleviate poverty for coffee growing households?’ than existing export or market information, that while important, does not provide the level of information needed for Aldeias to make relevant decisions on how to proceed with coffee growing activities for their households.

**Designing the coffee growers household survey**

The first draft of the household level survey was developed through collaborations between Southern Cross University and Monash University based on the informal
consultations and questions that were raised during the meetings in 2007 in Timor-Leste between SCU, ETCI, Aldeia leaders and CCT members. The survey was designed to be exploratory by nature and to allow comparisons with previous household surveys, such as those of the World Bank (World Bank, 2001) and information from the United Nations National Household Survey Capability Program (UN, 2015) and the World Bank’s Living Standards Measurement Study survey program (World Bank, 2004). The survey was then modified to target more specific and culturally appropriate questions through consultation, between the researcher and the Director of ETCI once in Timor-Leste, since collaboration in a cross-cultural setting necessitates the researcher to carry out research that is sensitive and culturally appropriate (Liamputtong, 2010).

The researcher worked with staff, and primarily the Director of ETCI rather than Aldeia leaders to modify the survey as ETCI had intimate knowledge of the coffee growing Aldeias through their work as a higher education facility focused on coffee, based in the capital of the main coffee growing district, Ermera. Friday et al. (2006) while conducting PAR in Timor-Leste also noted that while an aim of PAR is for the local people to have full control over the research process, it was not always possible. It was a major decision in the research process to take the PAR approach up a level away from directly working with Aldeia leaders and coffee growing households directly, to working with ETCI as a higher education facility. Participatory action research is about sharing power, decision-making and responsibility in order to empower communities, with the community being involved in all stages of the research (Morford et al., 2004; Ruechakul et al., 2015). It aims for people who are economically and socially marginalised to have increased power in decisions that directly impact their lives (Kothari & Minogue, 2002), which is extremely relevant for the agricultural community in Timor-Leste with the challenges they face.

While PAR would usually engage with the participants being studied since it aims to discover and build on skills and abilities already present and involve the community in development projects that directly affect them (Angeles, 2005), in this research project PAR was used as an approach to bringing empowerment to the overall research process; however, the survey question was derived from the community being studied and the coffee growers were involved in the reporting back process at the completion of the pilot study.
It was suggested and led by ETCI to include four coffee farmers from Gleno into the discussion on how best to word survey questions so that they would reflect the reality of practises that are a part of the coffee growing community. It was decided that ETCI staff and students would conduct the household survey interviews, due to cultural and language considerations. Temple and Edwards (2002) discuss how language incorporates beliefs and values and contains social, cultural and political meanings and how the words we use are important since for example words can mean different things in different cultures.

The household level survey consisted of 41 questions, mainly closed-ended. Selected main questions led to further open-ended questions to obtain more detail. The English version of ‘The Economics of Coffee and Rural Producer Households in Timor-Leste Survey’ is provided in Appendix A. A separate answer sheet was designed to minimise the amount of paper taken into the field (i.e. each person only needed one question sheet, and answer sheets could be re-formatted for ease of use in the field). This household level survey was designed to have simple non-intrusive questions at the beginning and then progress to more personal questions towards the end such as income and expenditure details, since it is recommended by survey design texts, to put sensitive questions at the end of the questionnaire in order to reduce non responses or survey participants quitting part way through (Tourangeau & Yan, 2007). Surveys took between 30 minutes to one hour for respondents to complete.

The use of closed-ended questions in the survey was important due to time and financial restrictions. Working in a multilingual context added complexity in understanding as well, therefore the use of closed-ended questions reduced the chance of misunderstanding and incorrect translations during analysis.

Sampling was designed to target a range of locations; remote and closer to urban areas and markets. The sampling technique was based on a stratified sample, with a semi-random selection of clusters within each stratum across the five sub-districts of Ermera district, and the sub-district Maubisse in Ainaro district. A semi-random selection of a sample of households within each cluster was then performed. These semi-random processes arose from the collaborative discussions with ETCI staff as it was highlighted that due to the need to avoid areas of potential risk (due to in-country safety concerns) the selection of areas could not be completely randomised, so representative communities were chosen in safer locations. Area selection was also influenced by the availability of access to
households, as some potential sample sites were too remote to access within the time-frame of this pilot study. The final survey areas were confirmed through collaboration with ETCI staff with six major clusters decided upon. The six major clusters were the sub-districts Railaco, Ermera, Hatolia, Letefoho, Atsabe and Maubisse (Figure 11). These clusters were then divided into a further 24 minor survey areas.

Figure 11: The six surveyed sub-districts for the pilot study

The sample size was initially aimed for at least 200 households, however, after consultation with the ETCI staff, a higher figure of 350 was agreed upon. This was due to an increase in cluster locations and the high possibility that some groups may not complete their allocated surveys in time. This indication was given by the ETCI staff as it was unknown to them how productive the survey teams would be as this was the first field survey experience many of the survey team had participated in. This was an important part of the collaborative process in this PARC as expectation management is a key theme in determining the success of this approach (Starkey & Madan, 2001). It was also important that expectations were managed for the researcher.

Training and Data Collection

An important part of the methodology was to collaborate with the staff and students at ETCI in both the structure of the household survey and the finalisation of question wording to ensure intellectual rigour, cultural considerations and as part of a requested capacity building process. As a higher education facility, ETCI was enthusiastic to learn
and get practical experience conducting field work so it was planned by the researcher to involve ETCI in the final design, implementation and data input and data analysis components of the pilot study. The involvement and knowledge of these staff and students was critical to accomplishing the household survey research objectives, and to completing the surveys within the research timeframe. This promoted local ownership of this research with ownership of the research process an important element in the potential for participatory research to generate social transformation (Gonsalves et al., 2005). The influence of this experience, spread to the Aldeias as the majority of students at ETCI come from the coffee growing households of Ermera district (L. Gomes, personal communication). Staff and students learnt about research methodology and survey techniques. Many of the ETCI staff and students were also eager to learn of the project’s results.

An important determinant of the quality of data obtained, is the way the purpose and relevance of the study is explained to respondents (Kumar, 2011). The Director of ETCI and the researcher conducted a training day at ETCI to discuss the survey’s purpose and appropriate fieldwork methods. The training approach used by the researcher was to first provide training for the Director of ETCI who, because of his status, was the primary training instructor of the Timorese staff and students at ETCI, and he would then take the lead in the training. This strategy was decided upon due to the three factors of language, position within ETCI (he was the Director) and Timor-Leste traditionally being a patriarchal society. The purpose of the study, major research focuses and survey layout were explained, and through general discussion minor changes were made to the survey questions and structure to finalise. Proper sampling and survey technique was explained and ethical considerations discussed. Surveys were handed to staff and students during the training to practise entering answers and any questions that arose were clarified. The specific meanings of questions were clarified and it was reinforced that there was the need for objectivity in recording data and to avoid leading responses.

Staff and students were divided into small groups based on which locations they would survey. Six groups, one for each sub-district, were decided upon and a team leader chosen from ETCI staff was appointed. Each team had at least one member that was from that sub-district to ensure appropriate cultural considerations were taken into account and that linguistic considerations were accounted for. The team leader was in charge of checking
that surveys were completed in the field to a high standard, collecting all surveys and returning them to the researcher and the Director of ETCI.

Of the 350 surveys, 328 were returned completed from the field by the ETCI survey team. Due to concerns over low literacy rates, the ETCI survey team filled in all answers and explained all questions to the surveyed households. According to UNICEF (2013) the literacy rate of the total population of Timor-Leste (age 15 and over) is only 58.3%. The rural literacy rates, where coffee is grown, would be expected to be even lower with educational information from the 2007 census confirming this with figures of 74% of urban adults in Timor-Leste as literate while only 52% of rural adults were literate (Palms Australia, 2016).

5.1.3 Observation phase for the Timor-Leste Coffee and Poverty Project pilot study (Phase 3, PARC 1)

This section covers the observation phase of the Timor-Leste Coffee and Poverty Project pilot study which forms Phase 3 of PARC 1 (Figure 12). Selected results from the pilot study that demonstrate links to the theme of empowerment and helped shape the two rounds of household surveys that were conducted in the main study of the Timor-Leste Coffee and Poverty Project are outlined. Language is discussed as it led to the question of how language skills impact access to market. Results surrounding fair trade are also emphasised as it was not possible to investigate this thoroughly in the main study due to CCT dropping the fair trade certification at the time of the main study.

Figure 12: PARC Finder – observation phase of PARC 1, a pilot study for the Timor-Leste Coffee and Poverty Project

Selected pilot household survey results

Language

Language provides access, and markets function when people can communicate so this was an important variable to assess. The official languages of Timor-Leste are Tetum and

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1 Further detail on this is available in Participatory Action Research Cycle Two (PARC 2)
Portuguese, with English and Bahasa Indonesia labelled as business languages. When it is considered that Portuguese is an official language of the nation, the response of those with this language ability (this includes all household members from all surveys) was low (28.2%), while 44.3% were able to speak Bahasa Indonesia and only 5.5% could speak English.

An adult’s ability to speak English corresponded to an increase in income earned (compared with those who do not speak English), for both a household’s coffee income and total income. The ability to speak Portuguese also corresponded to an increase in income earned, for both coffee income and total income, though not as great as for English speakers. Bahasa Indonesia speaking ability also corresponded to increased income earned, for both coffee income and total income. The median total incomes and median coffee incomes for speaking and not speaking the three main languages (other than Tetum) are outlined in Table 3.

<table>
<thead>
<tr>
<th>Language</th>
<th>Total Income</th>
<th>Income from Coffee</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Median</td>
</tr>
<tr>
<td>English</td>
<td>83</td>
<td>$1226</td>
</tr>
<tr>
<td>No English</td>
<td>971</td>
<td>$425</td>
</tr>
<tr>
<td>Portuguese</td>
<td>293</td>
<td>$780</td>
</tr>
<tr>
<td>No Portuguese</td>
<td>761</td>
<td>$395</td>
</tr>
<tr>
<td>Bahasa</td>
<td>573</td>
<td>$600</td>
</tr>
<tr>
<td>No Bahasa</td>
<td>481</td>
<td>$395</td>
</tr>
</tbody>
</table>

These three languages appeared to provide greater access to a higher income than having just Tetum (or other native dialects of which there are 16) communication skills. The low level of Portuguese speakers (from the people surveyed in this study) is a concern because the majority of legal and government services in Timor-Leste are communicated through Portuguese (Drysdale 2007). This provides a barrier to these services for those lacking this skill. Therefore as part of the major study it was decided that it should be investigated, to determine which languages coffee producers use the most when selling coffee. This would then help clarify if language was providing access to the market, resulting in better income or if other factors such as education or information access were having an impact. It is
important to note however that Tetum should not be dismissed as it has powerful symbolic value as the language of national identity. According to Taylor-Leech (2009),

“...it [Tetum] is as capable as any of meeting the demands of the modern world...[and] the more a language is used for new registers, the better its ability to develop and expand its lexicon.”

Selling coffee
Question 22 of the survey asked from ‘where do you get your coffee to sell’ with respondents asked to choose only one option of the three provided. Through mistranslation and misunderstanding however, a clear answer to this question was not obtained and therefore the approach to this question was changed for the main survey with more specific questions to gain more relevant insights. This included expanding the question set to inquire about land size, if the same trees are harvested from each year and access to these trees.

Most producers were located close to their coffee plots with approximately 65.3% walking less than 2km to harvest their coffee; only 8.2% walk further than 5km. While only three households reported that the distance they walk to harvest their coffee is over 10km, it is still worth mentioning as this highlights how hard it is for some growers to just access their coffee, before even considering added difficulties involved in pruning, maintenance and rehabilitation. The majority of coffee sold in Timor-Leste is by roadside or farm-gate which explains why 29.3% of respondents did not travel and responded ‘waiting’ when asked how far they travelled to sell their coffee after harvesting. This response also helped shape the wording in the main study to give more relevant options when completing the survey.

Question 27(2c) asked coffee producers how they transported their coffee to sell. The question had a large number of missing or invalid responses (38.4%). While some of these responses were genuinely missing from the data set, many also had a recorded response of ‘feeling tired’. The question asked on the survey sheet was re-translated from Tetum to English and appeared to be a correct translation. It is not known why in some cases this question was interpreted in a way to warrant this response, although it is interesting it appeared so many times. This highlights some of the issues in the use of Tetum translations and shows the importance of thorough understanding on behalf of the field researchers of question meanings.
Market access

The market that producers sold to, affected the price that was obtained for coffee despite quality and quantity. CCT is one of the major buyers of coffee in Timor-Leste and had almost half of the surveyed growers selling exclusively to them (Table 4). The high reported prevalence of sales to CCT is worthy of note as CCT are actually limited in the amount of coffee they can purchase (20-30% of the crop). While attempts were made to conduct random sampling, the CCT prevalence in these results may have been due to field researchers from ETCI having a tendency to survey known families. These families would most likely be associated with CCT due to CCT/ETCI links. Although five categories were identified for buyers, these results mainly focus on CCT and ‘other company’ as the remaining categories did not have as many responses in comparison. CCT produces and sells their coffee with ‘Fair Trade’ and organic certification. Therefore, by comparing CCT producers to producers selling to ‘other companies’, an indication of the impact these certifications are having on producers at a household level can be looked at.

Table 4: Different buyers of coffee

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCT</td>
<td>138</td>
<td>42.1</td>
<td>46.8</td>
</tr>
<tr>
<td>Other company</td>
<td>128</td>
<td>39.0</td>
<td>43.4</td>
</tr>
<tr>
<td>Middleman</td>
<td>22</td>
<td>6.7</td>
<td>7.5</td>
</tr>
<tr>
<td>CCT &amp; other company</td>
<td>5</td>
<td>1.5</td>
<td>1.7</td>
</tr>
<tr>
<td>Other company &amp; middleman</td>
<td>2</td>
<td>0.6</td>
<td>0.7</td>
</tr>
<tr>
<td>Total (valid)</td>
<td>295</td>
<td>89.9</td>
<td>100.0</td>
</tr>
<tr>
<td>Missing</td>
<td>33</td>
<td>10.1</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>328</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

CCT was separated from the other companies in this study due to its prevalence as a buyer and its situation of being set up as a cooperative using fair trade and organic certifications to achieve price premiums. Since CCT operates as a cooperative receiving fair trade and organic price premiums it might be assumed that producers selling to CCT would receive greater financial benefits than those selling to other companies. Total income was investigated as well as total coffee income to determine if being part of a cooperative may have other financial benefits apart from simply impacting coffee income. The results in
Table 5 show that those growers who sold to CCT had a greater average total income than those who sold to ‘other companies’. A Kruskal-Wallis Test revealed however, that the difference in total income was not significant. A Kruskal-Wallis Test also revealed that there was no significant difference in total income from coffee between those selling to CCT or ‘other companies’. Therefore, income was not dependent on the buyer of the coffee for these results.

Table 5: The effect of selling to different buyers on income

<table>
<thead>
<tr>
<th></th>
<th>Total Income</th>
<th></th>
<th>Income Coffee</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean Median</td>
<td>Valid</td>
<td>Mean Median</td>
<td>Valid</td>
</tr>
<tr>
<td>CCT</td>
<td>$843.66 $450</td>
<td>143</td>
<td>$565.62 $275</td>
<td>142</td>
</tr>
<tr>
<td>Other company</td>
<td>$612.95 $382.50</td>
<td>122</td>
<td>$429.27 $312.50</td>
<td>120</td>
</tr>
<tr>
<td>Middleman</td>
<td>$793.91 $620</td>
<td>22</td>
<td>$680.24 $500</td>
<td>21</td>
</tr>
<tr>
<td>CCT &amp; other company</td>
<td>$1892.20 $330</td>
<td>5</td>
<td>$1882.20 $330</td>
<td>5</td>
</tr>
<tr>
<td>Other company &amp; middleman</td>
<td>$215.50 $215.50</td>
<td>2</td>
<td>$215.50 $215.50</td>
<td>2</td>
</tr>
</tbody>
</table>

Fair trade impact

Results from the pilot household survey suggested that for the coffee growers of Timor-Leste, fair trade had not provided the solution to alleviate the country’s development issues present in this sector. Existing research overviewed by Raynolds, (2002) suggests that the potential capacity of fair trade to help alleviate poverty is shaped by political and economic conditions at global, national and sub-national levels, the internal organisation of producer groups and their external links to state, corporate, and NGO groups, and the individual characteristics of growers such as ideological commitment, educational levels, market sophistication, capital and labour resources, and environmental assets.

The most common aspect of fair trade that is mentioned as problematic is the minimum price, (which is presently at US$1.40lb (Fair Trade, 2011) which is higher than the world price for coffee, yet only part of this amount reaches the farmers (Jaffee, 2007). This minimum price is to act as a safety net if the coffee prices fall below sustainable production costs (Fair Trade, 2011). The actual village and family level economics of fair trade differs from the general impression many consumers have. Many fair trade products have labels and marketing campaigns that promote that their products give growers a chance to break the poverty cycle and make the economic choice to farm their land.
sustainably. However, it has been reported that farmers in the Rincon in Mexico “like most small farmers in the fair-trade system have not broken that cycle” (Jaffee, 2007, p. 237). The payments that reach these fair trade farmers are about half the fair trade floor price and often well below the break-even point for most growers.

Some researchers maintain that fair trade producer groups are “passive suppliers of product” dependent on groups higher in the chain (Utting-Chamorro, 2005), with fair trade being more of an intervention than partnership, and that producers are not fully aware of the market’s benefits (Paul, 2005). The level of understanding the coffee growers of Timor-Leste have in relation to how fair trade works and the benefits that are intended to go with it is a topic that was planned to be further investigated in the main study. This aspect was of interest to the coffee famers, ETCI staff and students and the researcher.

Fair trade rules can actually work against poor growers as enterprising individuals are excluded; fair trade coffee is only purchased from collectives. With a fixed price there is no opportunity to leverage higher prices (Wilson, 2006). This is a potential problem facing the coffee farmers in this study. Coffee plantations in Timor-Leste need higher inputs of care, maintenance and quality control but those selling to CCT have no price incentive to increase these inputs. CCT does not check cherry quality at farm gate, rather waiting until the product reaches factory floor. Thus prices are fixed and not dependent on the quality of the product supplied. CCT guarantees a price to their farmers based on the New York C price at the start of the season. In the 2009 season this price was between US$0.30 – US$0.33 per kilogram of cherry.

As Wilson’s article in the Australian Financial Review explains,

“with a fixed price...there [is no] incentive for each producer to deliver a better-quality product when theirs is not differentiated from other collective members.
Returns are distributed according to collective decision, presenting opportunities for cronyism and preferential deals based on personal and political relationships”
(Wilson, 2006).

In 2009 Fair Trade paid US$1.26 per pound for fair trade green bean, plus an additional US$0.15 per pound for organic, resulting in US$1.41 per pound. This is the equivalent of US$3.11 per kilogram for green bean, and US$0.52 per kilogram for cherry (cherry to green ratio is 6:1). Growers in Timor-Leste were paid US$0.30 per kilogram by CCT at
farm gate, thereby receiving approximately 58% of the fair trade price paid. The remaining amount is the premium that is used by the cooperative. There are cooperatives in Nicaragua that used up to half of the fair trade/organic premiums to pay outstanding debt (Bacon, 2005). CCT pays for a substantial part of their health division with the fair trade premiums that come through. The health division of CCT is important, as health services have been reported as weak in all districts. In this study 31.4% of households had at least one member with ‘poor’ health, and only 5.7% of household members rated their health as ‘very good’ or ‘excellent’.

The median annual household income achieved from coffee in this study was US$332.50. There was no significant difference between the total income derived from coffee between those who sold to CCT (thus accessing the fair trade/organic market) and those who sold to other companies. The median total household income was US$420, and it should be noted that one in four households were earning less than US$200 for the year. With 78% of those surveyed in this study found to be living under the poverty line, of US$0.55 per capita per day, poverty for coffee growers in Timor-Leste is a prevalent reality. In Nicaragua a similar study of coffee income at a household level showed that access to certified markets led to significantly higher prices paid to growers at farm gate; also, certification had a greater influence on price than altitude (Bacon, 2005).

Adding to the problems of having an income below the poverty line, are the issues associated with coffee growers relying predominantly on a seasonal income. A median of 94.26% of total household income was derived from coffee as reported in this pilot study. This can lead to problems relating to budgeting and running up debt which can affect ability to purchase foods in difficult times. This may be an issue relevant to those surveyed in this study, as the expenditure section did not appear to be accurately completed.

5.1.4 Reflection on Participatory Action Research Cycle One (Phase 4, PARC 1)
This section explores the fourth and final phase for PARC 1 (Figure 13). The results of the pilot study are discussed in the terms of challenges and lessons learned. Reflections are included on the challenges of conducting research in Timor-Leste, the role of the researcher and the role of PAR in relation to empowerment.
Lessons learned from the pilot household survey

The research time in Timor-Leste was one month. With this timeframe there was little room for delays. The training of staff and students at ETCI was planned to occur in the first week. This was to allow two full weeks for students and staff to complete the household surveys in the field and allow data entry and translation to occur in the final week. However, due to the “nature of Timorese society” training was delayed by one week. Training was originally intended to last between two and three hours. However, when the training session was run it took over seven hours. The first two hours were consumed by official introductions, presentation of a Tais, an East Timorese textile, handwoven and naturally dyed, and a social lunch. Tradition and ceremony is a very important part of Timorese society. In many indigenous communities, the sharing of food is a significant part of holding discussions (Westby & Hwa-Froelich, 2003).

After these proceedings, survey sheets were distributed to staff and students to practice completing as the sheets were explained. The first three questions were completed in this way, then participation in this exercise dropped substantially. The Director of ETCI meticulously read and explained the entire survey over the training period. On the answer sheets that were distributed there was space to record information for up to 13 household members. Sheets for additional household members were also distributed to ETCI. While some households’ surveys recorded more than 13 members, not one of the additional member sheets were returned. It is not known if these sheets were used and lost, or never completed. Surveyed households were to be identified on a map so the variables of location and road access could be investigated. Due to time pressures and translation issues this objective was not achieved. Location names were however recorded accurately on surveys sheets, which was sufficient for the purpose of this study.

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2 This was a phrase that was constantly used by the expats in Timor-Leste who are more accustomed to operating by very structured and rigid timelines; which is not the culture in Timor-Leste.
Following the training day held at ETCI it quickly became apparent that more time needed to be allocated for developing and running the training for the household surveys. The importance and relevance of questions, and the reasons why training techniques such as completing practice surveys, needed to be thoroughly explained and understood. A thorough understanding of the relevance of questions would hopefully reduce the number of invalid responses obtained. A good example to illustrate this point from this study was question 27(c) which asked households ‘How did you get there?’ in regard to travelling to sell their coffee. A prominent response was ‘I am very tired’. This question had been accurately translated, however the meaning was apparently not clear. If ETCI staff and students had been more aware of specific objectives through more effective training for each question, this question may have received a more valid response.

Upon completion, surveys were to be entered into a pre-formatted excel spreadsheet that had been constructed at Southern Cross University prior to travelling to Timor-Leste. A step-by-step guide was also designed (to be translated in the field), and trialled by volunteers to determine if it was clear and simple to follow. This was all designed in an attempt to bring further capacity building to the staff and students from ETCI that were involved in the pilot study. However, due to problems that arose due to translation and understanding, the excel spreadsheet could not be used. Some questions were no longer the original questions and some closed-ended questions had become open ended, thus having multiple answers that could not be input. The initial idea was to have students and staff at ETCI help in data entry to give experience in this field but as this was no longer possible the use of the program was explained and demonstrated only to the director of ETCI. As a result, surveys were translated directly onto the survey sheets. It appeared that this was more of a disappointment to the researcher than to the ETCI research team, as it was desired by the researcher to create as many opportunities as possible for capacity building throughout the project. Through this process however a greater understanding of how capacity building relates to empowerment was developed and carried into the next PARC.

The pilot household survey was translated from English to Tetum, with the surveys then re-translated from Tetum to English to improve accuracy of translation, however mistranslation still occurred for some questions. Three factors that influenced the mistranslation were:
1. Time constraints
2. The same person conducting both translations

Timor-Leste is a multi-lingual society and this has had a direct influence on the survey results. This resulted in survey answers being recorded in Tetum, Bahasa Indonesia, Portuguese and English (as well as a few other languages sometimes). This made translation back into English sometimes difficult for both the researcher, and those who assisted in the translations in Timor-Leste. Care was taken to understand and interpret recorded answers by comparing with other answers in the same survey and between surveys, and through general discussion. If an answer was not understood it was changed to ‘missing data’, to maintain the survey’s validity.

PARC 1 was aimed at obtaining initial data on coffee producing households and assessing the effectiveness of the structure and approach of the household survey. A summary of notable points and follow-up questions that arose from this pilot study are listed below:

- Use simple language in questions for ease of translation.
- Use an experienced translator for question translations and have all questions re-translated by an additional person to check validity.
- Explain rationale behind questions thoroughly in training session so valid responses are obtained.
- Maintain contact and work closely with ETCI in future projects.
- Use GPS for location mapping of surveyed areas to investigate the effect of road access on selected variables.
- Investigate motivation behind farmers’ choice of selling cherry or parchment.
- Investigate how language affects coffee incomes.
- Investigate food consumption in households. Whether they have subsistence crops, what is grown, sold, traded and consumed.
- Re-develop expenditure question as many surveys had equal weighting to all, or a selection, of expenditure categories.

The questions this pilot study sought to begin addressing were ‘Is coffee a good crop for Timor-Leste households to grow and harvest from?’ and ‘does certified coffee have the capacity to alleviate poverty for coffee growing households?’ For fair trade to be effective in Timor-Leste and through the developing world its integrity must be upheld and its goals progressive. CCT is providing employment opportunities, and promoting better practices
in coffee production and marketing. Through its strict quality policies it has accessed the organic fair trade market and identified Timor-Leste coffee as a high quality product on the world market. Coffee as the sole income of households, even with fair trade certifications will not make the growers of Timor-Leste rich; but it does have the potential to improve the current standards of living, especially if it is grown in association with alternative agroforestry products. While this study did not show coffee growers benefiting economically by selling to CCT compared with selling to other companies (as there was no significant difference in incomes), there may be other benefits of being part of a cooperative such as health care.

Even though CCT have made many positive contributions to development in Timor-Leste, if the practices continued as they were during the time of this pilot study, they may keep the people of Timor-Leste locked into the primary sector commodities market, not allow households to take advantage of value-adding stages and may undermine certified coffee’s capacity as a means to alleviate poverty.

Challenges

The Enterprise Development Advisor to CCT gave his own opinion of the challenges in Timor-Leste:

“...one of the biggest problems in East Timor, even today ten years after independence is one of management at all levels; right from the farmer... to the top level of administration. It’s become a tradition in East Timor not to think beyond today or plan for the future. It’s probably because of the way the country has been led in the past. Four hundred and fifty years of Portuguese rule, 24 years of Indonesian, and then as the Timorese say there were two years of the United Nations, and that’s still going on now” (personal communication, August 6, 2009).

The colonial past of Timor-Leste has resulted in a certain mindset that many informants interviewed commented about. When asked in regard to the coffee industry what was one of the major challenges in improving it, the majority of those interviewed all commented on the mindset. An agribusiness advisor for NCBA, “The major challenge is the mindset. With patience and perseverance things are changing” (personal communication, August 19, 2009). The Minister for Agriculture said that a priority for Timor-Leste was to “repair our mentality” (M. Sabino, personal communication, August 18, 2009). The Coordinator for Cooperacao Agricola Portuguesa said that:
“The biggest challenge here in agriculture such as in forestry or natural resource management is always to try and change mentalities. It also needs to be simple for them to understand about it” (personal communication, August 14, 2009).

The Director of ETCI explained that the mentality is an issue as there have been “three different mentalities in East Timor.” During the Portuguese period they had very limited access to education, “our grandfather in the past, he is not writing, not learning, not reading” (L. Gomes, personal communication, August 28, 2009). Then there was the Indonesian period where they received education but it was “a time of fighting.” So there is a mix from those two periods, plus now, the time of independence which adds its own problems. The Director said that so many different countries have an interest in Timor-Leste and bring with them so many different cultures, that it adds to the confusion. This is exasperated when organisations do not collaborate, which can result in different information being distributed.

The Director further commented that for the first time in centuries, they are free. They are free from the imposed impediments, free from the fighting and free to sleep in peace at night. So now the mentality needs to change so they “can start acting like a country that is free.” The way to achieve this is by working together with the farmers, giving demonstrations and discussing after the implementation. He said that follow-up visits on a regular, on-going basis were important to slowly change mentality and practices. He gave the example, “I don’t say to you, please you change your mentality, and then you change your mentality. They need more time.”

Adding to the mentality issue is the lack of education and job opportunities. The Dean of Agriculture at the National University of Timor-Leste said that skills were not being properly utilised. In 2008 they had 368 students graduate and when they were interviewed in 2009, 324 had a job, but only one of them was in the agricultural sector. The Director of ETCI mirrored the same thought saying, “we don’t use our community in this country.” This was in reference to people coming from the international community to work. He said that when they come just for employment and not to help it is a problem. When the country needs the skills it is fine, however sometimes the skills already exist in the Timorese population. Hence why in the Timor-Leste Coffee and Poverty Project one of the main outcomes that was hoped to be achieved was bringing empowerment to the research process.
Reflection on the role of the researcher

In the case of this pilot study it was my role to facilitate the design, training and implementation of the pilot household survey. Even though a participatory action research approach began in this cycle with the goal to create opportunities to involve and empower ETCI at an organisational and individual level and involve coffee farmers more in the research process, there were many challenges that diminished these opportunities.

The pilot household survey was constructed in Australia so that it had academic rigour, based on the informal conversations and meetings held with ETCI, Aldeia leaders and CCT members in Timor-Leste to begin the investigation to answer the community based question. Modifications to the original survey were made with ETCI rather than directly involving coffee farmers in the process due to low literacy rates. Also the ETCI staff were members of their community and as a result the coffee growers would feel more comfortable communicating through them rather than ‘outsiders’ as it could be difficult to engage with authority figures considering their long history of colonisation and their current post-conflict situation. This does follow the concept of participatory action research however as the research team was solely Timorese so that they were researching their own communities. However, as much as I wanted to believe at the time that as a researcher I was stepping back, the reality is that the role of the researcher is still central to the process due to the power that is held. Being aware of this power dynamic however can lead to greater opportunities to bring empowerment into the process.

While this was not my first time engaging with communities in a LEDC, it was my first time immersing myself in a new culture as a researcher. This new
perspective made marked changes to myself both personally and professionally. There was a fine line between the balance I wanted to bring to the research from the scientifically rigorous side that had been instilled in me through my university education and then facing the context of working in an environment with minimal resources and low levels of education. During this research trip I was faced with the issue of assertiveness during the training conducted at ETCI. During the morning tea break I had reflected:

“I am uncertain as to where the boundaries lie, by speaking up during the training at ETCI I feel like I am being disrespectful and undermining the Director’s authority. I’m trying to be culturally aware that this is a patriarchal society, I’m faced with the language barrier and I did want to build as much ownership of this project over to ETCI as possible - but I now feel like I have been excluded from the process and I worry about what is being said and explained as nothing is being translated back to me.”

This challenge had come as a surprise as during private meetings the power dynamic between the Director and I had seemed equal - both of us knowing that we contributed different skills and knowledge to the project. In this circumstance with the training I took the Director aside and quickly went over the main aspects of the survey that needed explaining clearly or might be confusing. I had hoped that after this discussion I may be included more in the training, however this was not the case.

The major challenges I faced as a researcher in Timor-Leste were the language barrier as I only spoke a few words and phrases of Tetum and Bahasa Indonesia, mis-understandings and incorrect translations, a lack of familiar organisation practices, being a young foreign woman and working
within a one-month time-frame. As little English is spoken in Timor-Leste, particularly in the regions, a major part of my time was spent validating information provided. The different culture and expectations of work progress were initially difficult to work in and I reflected:

“It is so challenging trying to get anything done, people keep saying to me that I am just getting the Timor experience and laugh. I find it quite sad that it is just expected that things will not get done properly. I find it very hard working with my main contact. Plans are not stuck to, they change without notice and communication starts and stops without warning. I am constantly waiting and wondering if we will ever get this pilot study done.”

Once I realised that it was my perspective and approach that needed to change the process was a lot smoother and the lessons learned were invaluable for the next stage of the project. The challenge of learning to research and live in Timor-Leste was an intense, but an incredibly valuable and rewarding experience. Merriam and Associates (2002) write that there is no substitute for experience, whether through learning to collect better qualitative data by being authentic, or having to handle the unanticipated in the field. My experience has led my view to parallel that of Correll, that “Qualitative research realises its potential when researchers immerse themselves in a setting and struggle to figure out the best way to understand it” (cited in Merriam & Associates, 2002, p. 423). While one month was not long enough to completely ‘immerse’ myself, the contacts, networks and friendships established whilst there would streamline future activities in-country by managing and identifying the challenges of conducting research in this country.
The overall experience was overwhelming for a multitude of reasons; however it contributed greatly to the main research project and provided life changing experiences for me as a researcher. Questions outside the scope of this study started playing heavily in my mind; mainly what is the role of the researcher and how can research projects impact the development of LEDCs, particularly post-conflict ones? I reflected that in order to more effectively complete the next stage of the research I would need to maintain the relationships that had been built once I had returned to Australia, that as much consultation as possible should take place before arriving in Timor-Leste next time and that my language skills needed to be developed.

I also felt that where I needed to become more assertive was in expectation management. If this was to be a collaborative project then the power had to be shared in appropriate ways. Therefore understanding what collaborator's roles would be would be very important to define at the start of the main study and in the next step of the research process.

*Reflection on participatory action research for empowerment*

The focus of PARC 1 was to use PAR to investigate the community based question “Is coffee a good crop for Timor-Leste households to grow and harvest from?” and in addition, specifically ‘Does certified coffee have the capacity to alleviate poverty for coffee growing households?” Participatory action research is an approach that allows the researcher to involve the community in the research process and bring empowerment into this process. Within PARC 1 these questions began to be addressed through a pilot study that would be used to inform the next stage of the project, particularly through lessons learned.

Empowerment was brought into this PARC by engaging with ETCI to modify and conduct the household survey. This process however outlined to the researcher that role definitions and expectation management needed to be more clearly defined in the subsequent cycles. There is a difference between empowerment and taking over. The skills that each party
bring need to be clearly defined and utilised during the process. As this was not clearly managed in this cycle the training was not conducted as accurately or effectively as it could have been, resulting in mistakes with the data collection and therefore in terms of capacity building there were areas that needed much more refining. The training was a good opportunity for capacity building, however due to roles not being clearly defined the training was more of a dictation. Resources and knowledge that would improve the empowerment and capacity building process would be expectation management, clearly defined roles, better understanding of culture, use of graphic communication, more time and bringing no assumptions.

It was empowering for the Aldeias as they came up with the question they wanted answered without being approached by the researchers. ETCI was empowered in collaborating to conduct field work when this opportunity to research their own people does not happen as often as it should. It was empowering for the researcher to learn lessons to better conduct the research. The PAR approach needed to more effectively be used by allowing much more time for collaboration, training and implementation for it to be an empowering process. The danger otherwise is that this could become a disempowering process. Empowerment themes that have arisen from participatory action research cycle one at an individual, organisational and community level are outlined in Figure 14.
The nested Venn diagram (Figure 14) organises the main and emerging empowerment themes and PAR tools at three levels. These three levels correspond to the three empowerment levels of individual, organisation and community as identified by Perkins and Zimmerman (1995). The inner level is at the individual level which contains the themes and tools that relate to an individual (for example researchers and individual collaborators) in this research setting. This individual level is ‘nested’ within the organisational level to show that the individual is influenced by the surrounding levels. This organisational level also contains themes and tools and is nested within the community level which highlights the main overarching empowerment themes and PAR tools that influence and are present in this setting. The community level consists of the people in this PARC that may or may not be spatially associated but share common identities, interests and problems. The use of the nested Venn diagram to identify levels and group themes is also intended to signify reciprocities of effects between levels as a similar approach to Pridham, O’Mallon, & Prain (2012).
To arrive at these empowerment themes and PAR tools, thematic analysis was conducted of interview transcripts, field journals, personal reflections, observational data and surveys. Thematic analysis identifies and reports themes which organises and describes the data (Braun & Clark, 2006). Before analysing the data, main themes related to empowerment and PAR literature were identified and recorded. Through the thematic analysis process data was then analysed and coded to correspond to these initially identified themes as well as emerging themes. Therefore the coding was both data-driven and theory driven (Quarshie, Osafo, Akotia, & Peprah, 2015). These themes were then included at the relevant level within the nested Venn diagram.

5.1.5 Evolution in participatory action research methodology
PARC 1 presented the development of a pilot study exploring the challenges associated with working in agricultural communities in Timor-Leste to assess the viability of conducting research in the coffee production sector in Timor-Leste. It was found that conducting household surveys would be an effective method for collecting data on coffee growers, however this effort would be better focused by containing the case study area to one district. It was also found that obtaining accurate data was difficult in this setting and that a much greater focus on translation and training needed to be incorporated into the overall methodology. Specific strategies such as working with one “champion”, maintaining working relationships once not in-country anymore and improving the researcher’s language skills are also important outcomes of this first participatory action research cycle. Based on the preliminary results it was expected that the next survey would take a more detailed look at the role certification is playing in the coffee industry in Timor-Leste as it is more involved than just the impact it has on household incomes. Research trips undertaken to plan for the main study in the Timor-Leste Coffee and Poverty Project are documented in PARC 2 (Figure 15).
Figure 15: Evolution in participatory action research cycles to PARC 2
5.2 Participatory Action Research Cycle Two: Capacity building for engaging communities in research

In Participatory Action Research Cycle One (PARC 1), a pilot study was developed and implemented, and the themes, developed through community discussions distilled into two main questions: a general question of ‘Is coffee a good crop for Timor-Leste households to grow and harvest from?’ and specifically, ‘Does certified coffee have the capacity to alleviate poverty for coffee growing households?’ This led to the discussion that, for fair trade to be effective in Timor-Leste and in LEDCs, its integrity must be upheld and its goals progressive to adapt to grower needs within specific contexts. While the pilot study did not show coffee growers benefiting economically by selling to the cooperative with fair trade certification, CCT, compared with selling to other companies (as there was no significant difference in incomes), there was an interest to more thoroughly investigate this in the main study. Therefore it was expected that the household surveys in the Timor-Leste Coffee and Poverty Project would ‘look deeper’ into the findings of the pilot study. Factors were also identified by both the researcher and the ETCI research team, which would improve the quality of the Timor-Leste Coffee and Poverty Project. The major factors identified included the need for more thorough training and translation, to obtain Global Positioning System (GPS) data on household locations and the need to focus on a collaborative approach. It would however be necessary, and much more effective, to work through one partner or ‘champion’ as opposed to a ‘gatekeeper’, who is usually a person in a senior position that has status and respect within that setting. A champion is someone who can help persuade gatekeepers to look favourably on researchers’ requests (Korczynski, 2004). Therefore the selection of this person was a crucial decision that would have direct impacts on the success of the project.

To conduct the Timor-Leste Coffee and Poverty Project, funding was obtained from AusAID for Monash University and Southern Cross University to conduct the study and initial aims were as follows:

1. A Geographic Information System (GIS) based land use/cover inventory, including a series of maps showing the status of land use/cover, and a detailed database of spatial characteristics of coffee growing areas.

2. To map the extent of coffee plantations, the extent of cover of coffee shade trees and environmental hazards to inform policy and provide recommendations.
3. A quantitative economic model of income earned by coffee growing households, that can be used to identify the effects on income of spatial characteristics, land tenure, approaches to processing, access to markets, access to training.

4. An understanding of how volatility in production and price affect the welfare of poor growers, and an evaluation of means of protecting against these effects.

There is little hard data available for Timor-Leste on agricultural production and household welfare, so primary data collection needed to be part of this project. There were two main sources of data.

1. *Spatial mapping of land use and capability, concentrating on coffee growing areas*
   Data would include information on actual and potential land use, altitude, water resources, as well as existing settlements, roads and other services (schooling, health services, markets, etc). This data collection could be implemented using Geoinformatics (Remote Sensing, GPS, GIS) to collect, manipulate and analyse the necessary data. Standard land classifications would be used, highlighting different potential uses of land. Classifications to take into account would include water catchment, access to roads and settlements, steepness of terrain. The GIS could be used for a number of purposes, including identifying locations for future development, but most relevantly to this project, quantifying key spatial factors that might explain variations in income of coffee producing households and differences in household welfare. It would also highlight erosion risk areas and map current land use patterns. This aspect of the **Timor-Leste Coffee and Poverty Project** is outside the scope of this thesis, however some of the issues with the GIS aspect will be discussed in PARC 2 and PARC 3 that are related to the household survey linking to GIS.

2. *An extensive household survey of coffee growing households*
   It was proposed to survey 500 households at this time. A stratified sample would need to be used, with a semi-random selection of clusters within each stratum, and then random selection of households within each cluster. Potential stratification dimensions would include:
   - Access to markets/towns/urban areas
   - Type of coffee supply/market (whether buyers purchase coffee cherries or beans, extent of emphasis on high quality)
- Type of coffee farming prevalent in the area (small private landholder, communal land ownership, or coffee collected from unclaimed trees as wild berries)

The survey would collect data in three broad areas:

1. Household and neighbourhood characteristics
2. Coffee production activities, resources, outputs, prices, dealings with buyers
3. Household income, expenditure and welfare, especially that of children

The proposal was to survey each household twice, with six months between surveys. One round would occur before the coffee harvest time, when households would be receiving no income from coffee (i.e. the hungry time), and the other just after the coffee harvest time when households had received good income flows. These were the general guidelines that needed to be followed to comply with the funding body; however it was then an additional goal of this project to build in opportunities for empowerment in the Timor-Leste agricultural community through a participatory action research (PAR) approach.

As a result, of the reflection from PARC 1, the focus of Participatory Action Research Cycle Two (PARC 2) (Figure 16), is on how to coordinate effective meetings and conduct effective training and capacity building when working in a cross-cultural context to develop the Timor-Leste Coffee and Poverty Project with the added challenges of language and with Timor-Leste being a post-conflict nation as were discussed in Chapter Two and Chapter Three. The PARC 2 problem definition and cycle summary are outlined in Figure 17. The planning phase of PARC 2 discusses the feedback received from the pilot study through discussions with Timorese organisations and the main necessary changes and needs that were identified of specific communities, mainly in the areas of training and collaboration. The action phase includes detailed information on what meetings were held and how they were conducted as well as discussing the requested GIS training that occurred and how outcomes of this training were measured. The observation phase discusses the outcomes of the meetings and GIS training, and reflection is addressed by discussing how these processes enhanced the project and the opportunities for empowerment. PARC 2 will conclude with insights formed from the in-country discussions and from conducting GIS training and introduce the next stage of the research which has been shaped from this second participatory action cycle.
**Problem Definition:**

Responding to the need for capacity building – geospatial training for Timorese research team and household survey

- **PLAN**
  - Request for capacity building
  - Identify training needs
  - Feedback from pilot study through debrief meetings

- **ACT**
  - Collaboratively redesign survey
  - Conducted requested GIS training

- **OBSERVE**
  - Outcomes of meetings
  - Survey development to date
  - Outcomes of GIS training

- **REFLECT**
  - Role of researcher
  - Opportunities for empowerment
  - Challenges in training

Figure 17: Participatory Action Research Cycle Two (PARC 2) problem definition and cycle summary

### 5.2.1 Planning phase of the Timor-Leste Coffee and Poverty Project case study (Phase 1, PARC 2)

This section covers the planning phase of the *Timor-Leste Coffee and Poverty Project* case study which forms Phase 1 of PARC 2 (Figure 18). The communities involved in
PARC 2 are outlined in Table 6. The debriefing of pilot study results in Timor-Leste discussed and the new problem of ‘how to build relevant capacity building into a collaborative community based project’ is introduced.

![Figure 18: PARC Finder – planning phase of PARC 2, discovering opportunities for planning and capacity building for the Timor-Leste Coffee and Poverty Project](image)

Table 6: Communities involved in Participatory Action Research Cycle Two

<table>
<thead>
<tr>
<th>COMMUNITY</th>
<th>Role and/or responsibilities in project</th>
<th>Power dynamic and/or needs</th>
<th>Tools used/empowerment gained</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALGIS</td>
<td>• GIS department with MAF</td>
<td>• Need more people within department trained in GIS</td>
<td>• Multiple people in department exposed to GIS capabilities</td>
</tr>
<tr>
<td></td>
<td>• Received GIS training</td>
<td>• Need MAF to acknowledge the skill and resource needs of department</td>
<td>• More trust in own abilities</td>
</tr>
<tr>
<td></td>
<td>• Shared GIS data</td>
<td>• Multiple people in department exposed to GIS capabilities</td>
<td></td>
</tr>
<tr>
<td>Australian</td>
<td>• Managed/controlled funding</td>
<td>• Have the control over money and project direction due to reporting needs to funding</td>
<td>• Confidence and understanding in training</td>
</tr>
<tr>
<td>Research Team</td>
<td>• Southern Cross University and Monash University met with ETCI, UNTL and MAF to discuss survey training and design.</td>
<td>body AusAID</td>
<td>• Gained collaborators to enhance project</td>
</tr>
<tr>
<td></td>
<td>• Southern Cross University conducted GIS training with staff from ALGIS and UNTL, GPS training with MAF</td>
<td>• Need to collaborate with stakeholders to conduct project</td>
<td>• Used training to enhance capacity and build relationship with UNTL and MAF</td>
</tr>
<tr>
<td>CCT</td>
<td>• Key informant</td>
<td>• Goal to raise quality of coffee</td>
<td>• Additional information on their growers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Maintain grower membership</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PLAN</th>
<th>ACT</th>
<th>OBSERVE</th>
<th>REFLECT</th>
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</tr>
<tr>
<td>-----------</td>
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<td>-----------------------------</td>
</tr>
<tr>
<td>ETCI</td>
<td>• Debriefed about pilot study</td>
<td>• Need more training</td>
<td>• Gave feedback and insights on pilot</td>
</tr>
<tr>
<td></td>
<td>• Were champions of the project in the community and between agencies</td>
<td>• Not enough resources to conduct main study alone</td>
<td>• Reinforced existing relationships</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Not located in Dili which makes access difficult for on-going training</td>
<td>• Contributed to the main study through involvement in pilot study</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Have lecturers that also teach at UNTL</td>
<td>• Will be involved later in the project when reporting results back to Aldeia community</td>
</tr>
<tr>
<td>ETDA</td>
<td>• Provided training facility</td>
<td>• Needed experience facilitating groups</td>
<td>• Gained experience and a written review for how well it was organised</td>
</tr>
<tr>
<td>MAF</td>
<td>• Collaborate on survey design and logistics</td>
<td>• Skills and training in GIS and GPS</td>
<td>• Experience working with UNTL</td>
</tr>
<tr>
<td></td>
<td>• Permission for conducting surveys</td>
<td>• Closer collaboration with UNTL</td>
<td>• Training in GPS</td>
</tr>
<tr>
<td></td>
<td>• Receive GPS training</td>
<td></td>
<td>• Consultation in the research design process</td>
</tr>
<tr>
<td>UNTL</td>
<td>• Collaborate on survey design and logistics</td>
<td>• Skills and training in GIS and GPS</td>
<td>• Experience working with MAF</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Closer collaboration with MAF</td>
<td>• Training in GPS and GIS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Collaboration in the research design process</td>
</tr>
</tbody>
</table>

_Awareness building_

The planning of a major study in less economically developed countries (LEDCCs) can be difficult in a cross-cultural context. There is minimal guidance provided in the literature on how to undertake cross-cultural collaborative research (Hepi et al., 2007). Therefore it was important to assess the feasibility through the pilot study before proceeding with the

**Timor-Leste Coffee and Poverty Project.** The lessons learned by the researcher from the pilot study discussed in PARC 1, highlighted the need for stronger collaborative relationships to be built between the researchers and the Timorese research team to lead to better research outcomes. In order to conduct effective cross-cultural research there needs to be mutual respect, effective communication and trust between the parties involved (Hepi et al., 2007; Moller et al., 2009). This is particularly true for collaborative projects in post-
conflict contexts where there are underlying issues of lack of trust and confidence running through the society (Lothe & Peake, 2010).

From the 12th July to the 2nd August 2010 a research trip was undertaken to Timor-Leste to meet with ETCI, UNTL and MAF staff, to discuss the results of the pilot study that was outlined in PARC1 and establish how the next phase of the research would progress. Feedback on the pilot study from ETCI staff indicated that from their perspective the survey was a success and they were very proud to have contributed to the process. A summary of some key findings from the pilot study were given to ETCI staff (Appendix B) to translate and report back to the surveyed Aldeia community heads, however it is not known if this took place as no clear answer was ever given from ECTI.

To progress with the Timor-Leste Coffee and Poverty Project however it was mutually decided between the Australian research team and ETCI to approach the Agricultural Department in UNTL. There is a link between ETCI and UNTL as there is a crossover of staff that teach at both institutions. ETCI did not have the people resources to complete the field work for the main study for both the pre and post harvest household surveys, therefore by collaborating with the main university in Timor-Leste these resources could be accessed where there was a common ground of academia on which to build a collaborative relationship.

While differences were present such as teaching styles (Almeida, Martinho, & Lopes, 2012) familiarity of a scientific approach to problem solving was present. Therefore it would be more beneficial to all stakeholders/parties if UNTL became the collaborators rather than ETCI for the main study. Benefits in training and experience could still then be accessed by ETCI through common staff.

**Problem Definition**

It has been argued in the literature that participatory action research (PAR) should involve the immediate participants under study in the development, however for this project and for relevant empowerment opportunities it made more sense to still work within the agricultural community, however more directly with the educational and government institutes and provide the opportunity for them to research their own people which was empowering in itself as Timor-Leste communities have mostly been analysed from the

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3 Teaching methods in Timor-Leste tend to overvalue memorisation and passive acquisition of knowledge.
outside with participatory research’s potential not being recognised by donors and development researchers (Gonsalves et al. cited in Friday et al., 2006).

From lessons learned in the pilot study it was realised that rigorous training would be needed to ensure increased accuracy in results and that a strong foundational skill set was developed with the added benefit of building upon existing personal networks. Due to the history of aid organisations and researchers in LEDCs, and in particular Timor-Leste as discussed in Chapter Three, a crucial part of the research project was to now focus on these relationships and build ownership of the project with the Timorese staff. Therefore the problem to address at this stage of the project was ‘how to build relevant capacity building into a collaborative community based project.’

A number of meetings were planned to be held while in Timor-Leste with UNTL, CCT and MAF where the research report (Appendix B) based on the pilot study summarising main findings and project plan handout (Appendix C) would be used to aid the discussions and show the reporting back process. Planning these meetings while still in Australia was difficult as the internet access and quality in 2010 was not high. There is also the problem that many researchers contact people at these organisations for information, to make contact and potentially meet, however not all follow through which makes it difficult for the next researcher that comes along. Researchers undertaking social science investigations in cross-cultural settings, are often criticised for continuing to engage in and foster inequalities of power in the research relationship between the researcher and the researched by contacting communities to get data and then never reporting back their findings which leads to the communities being suspicious and distrustful of researchers (Smith cited in Stewart & Draper, 2009).

5.2.2 Action phase of discovering opportunities for planning and capacity building (Phase 2, PARC 2)

This section explores the second phase of action for PARC2 (Figure 19). Through a number of meetings with different organisations and individuals in the agricultural community opportunities for capacity building with participants in Timor-Leste were discovered. The development with Timorese research participants for the Timor-Leste Coffee and Poverty Project household surveys is also examined.
To establish the next stage of developing the **Timor-Leste Coffee and Poverty Project** a number of meetings/key informant interviews were held in Timor-Leste. It was an important part of the research project to actually attend and conduct these meetings in person. Firstly as communication in Timor-Leste can be difficult due to technology constraints and secondly, and perhaps more importantly, due to the language differences and the need to establish a good working relationship. Smith (1999) advises when conducting research ethically in indigenous settings, the researcher is respectful, communicates face to face, shares knowledge generously and first looks and listens before talking (Smith cited in Hall, 2014). Communication is a very important component of the planning of participatory development projects as it involves and empowers the participants in their own process of development (Oliveira, 1993) and is a two way process of sharing information between both groups (Coldevin, 2002). While the effort was made to maintain contact while in Australia, contact was minimal. Emails were sent however they were not responded to or due to the language barriers were misinterpreted. Phone calls were also made, however due to phone numbers being changed and the difficulty in conveying information verbally on poor quality connections with language barriers present, it was decided to keep the information exchange to a bare minimum, let the contacts know we were coming and make more solid plans once in-country. While this did present issues of information gaps such as knowing the availability and plans of Timorese contacts and potential project knowledge to refine ideas while in Australia, it was not of major concern as the project development was planned to be mainly conducted in-country.

**Timor-Leste Coffee and Poverty Study Meetings**

**Meeting with UNTL**

On 12th July 2010 a meeting was organised between the Australian research team and the Dean of Agriculture at UNTL. Rather than start discussions straight away about the **Timor-Leste Coffee and Poverty Project**, the Australian team purposely spent time...
discussing the training needs of UNTL staff. Training needs were discussed as it was desired by the Australian team that through the collaborative process of this project, capacity building opportunities would be sought and implemented where possible. There was a big desire to try and get international scholarship opportunities for students and staff to improve the quality of UNTL, and building on this, Timor-Leste as a country – this desire for improvement through education is big in Timor-Leste as expressed by the Dean of Agriculture:

“We need to improve our situation; our staff needs the higher qualifications, the higher skills. How are we meant to teach our students for a better future when many of us only hold undergraduate qualifications? We need to keep expanding our experience” (personal communication, July 12, 2010).

Therefore an important part of the empowerment process in the Timor-Leste Coffee and Poverty Project was to provide opportunities to build capacity and as many skills as possible which in turn would also result in more accurate data being obtained. Responding to the needs of collaborators in collaborative research is important as building trust is a key issue in collaboration (Hepi et al., 2007). The Dean was briefed on the plans for the study and the desire for collaboration between UNTL, SCU and Monash University was expressed;

“Coffee is our main export and our people rely on it for their families, this is an important study that needs to be done. Together we can get good data that can be used to improve our situation” (personal communication, July 12, 2010).

At this stage, after the lessons learned from the pilot study, the role of “champion” needed to be filled and it was thought (by the Australian research team) that the Dean may be an appropriate person to undertake this important role. Further discussion also revealed that a big desire of UNTL, was to learn GIS skills. As it was planned that GIS components would be present in the Timor-Leste Coffee and Poverty Project a discussion to conduct GIS training, to occur in November 2010 took place. As many ideas had been exchanged and language barriers existed and are taxing even on those with a high level of English, the meeting was concluded so the Dean could reflect on what was discussed and a meeting was organised for the following day.
Second meeting with UNTL

The second meeting with UNTL was arranged for the 13th July 2010. It was important to keep the momentum so this follow-up meeting needed to be scheduled as soon as possible. The concept of time requires cultural sensitivity with some cultures starting and ending activities based on clock time and others that do not follow timetables (Westby & Hwa-Froelich, 2003). As discussed by Levine (1997), “the pace of life is a matter of tempo” and it can be difficult to adjust to another culture’s tempo or concept of time. It was therefore important that the researchers were mindful of this during the research process and built in enough time to be flexible with all involved. This time the meeting room was set up very differently to the previous day. Three members of the Australian research team attended and already present were, again, the Dean of Agriculture and in addition two lecturers from the Agriculture department. The office desks were rearranged to form a large table, which had been covered in a large Tais, and refreshments had also been provided. It became apparent that one of the other lecturers was very proficient in English. He had recent experience conducting surveys on social and economic conditions in Timor-Leste and also experience in GIS. The project was discussed and the draft survey, which had been prepared prior to this research trip based on the pilot study, was presented to stimulate discussion on themes with potential changes noted. UNTL was very keen to collaborate and it was decided that the aforementioned lecturer proficient in English would be the contact person and therefore the “champion” for this project. UNTL was very keen for the GIS training to take place in November and selected four lecturers to attend. As collaboration and strengthening ties was becoming a major goal of this project the next step was to discuss the project with the Ministry of Agriculture and Fisheries (MAF) as suggested by UNTL, to get their approval and see what skills and knowledge they could bring to the project.

Meeting with CCT Enterprise Development Advisor

An informal meeting with the Enterprise Development Advisor of CCT was organised to get input on some of the questions that had arisen from the pilot study as CCT featured prominently in many of the results as the largest buyer of coffee in the surveyed area. Certifications, and in particular fair trade certification, were a predominant feature in the pilot study through CCT having this certification in 2009, and its place in the world of coffee. An initial focus of the Timor-Leste Coffee and Poverty Project and the main focus of this thesis up until this point was going to be surrounding the impact of fair trade
coffee in Timor-Leste. However just before leaving for this research trip, CCT dropped fair trade certification and the need for added adaptability during this research project and process was highlighted very strongly. An important characteristic of successful action research is to be adaptable as well as to embrace uncertainty (Ang, 2014). This need to be adaptable was apparent very early on therefore the strength and relevance of PAR when conducting projects in unpredictable environments which LEDCs often are due to a number of reasons as discussed in Chapter Two, is particularly needed in Timor-Leste which is an ever changing environment with a need for sensitivity to make changes and research relevant. So the discussion began with what had occurred in relation to fair trade.

In the short time the Australian research team had already been in Timor-Leste this trip, informal discussions had already circulated that CCT was “kicked out” of fair trade. Consequently, the CCT was approached to discuss their version of events. To begin it is important to understand that fair trade has many strict requirements with one of these being the conducting of general annual meetings. CCT needed to conduct two annual meetings and 17 group meetings with the 17 divisions for these group meetings being based at the sub-district level. All members that attend the meetings have to be paid and catered for. Fair trade claimed that CCT was not complying with their rules, the Enterprise Development Advisor kept using the word *interference* a lot when discussing fair trade Labelling Organisation (FLO). The public compliance criteria (PCC) must be discussed at these meetings and everyone that is a member of the cooperative is invited to these meetings, which becomes expensive with the Enterprise Development Advisor also commenting that no one at the meetings really cared about discussing the PCC. FLO also requires a plan for the Fair Trade premiums and wants individual timelines for all the different areas. FLO wanted detailed minutes for all the meetings in the sub-groups and detailed invoicing. The premiums, which totalled US$338 000 in the 2008/2009 season, have always been used for subsidising the health clinics – however FLO didn’t accept what was occurring. When asked if the Timorese producers could take over the running of the meetings and make decisions about the premium usage the CCT Enterprise Development Advisor said, “*Will these people be able to do it? A big no.*” He also commented that they are not interested. “*The final thing*” (that made them negative to fair trade) is that FLO wanted the co-op to have a health and safety policy and evidence of training. The Enterprise Development Advisor developed and implemented this and sent photos of the training, the curriculum and attendance list, but that was not good enough for
FLO who required minutes of the training. The Enterprise Development Advisor said “We’ve hung in there” for as long as we can, but now it has become too much, “it was pedantic”, going on to explain that he did not think that FLO understands or appreciates the ground truth and that they were considering switching to Rainforest Alliance as the standards are not as strict.

So CCT opted out of fair trade which the Enterprise Development Advisor did not see as a problem as it was less important to Timor-Leste now due to the fact that they still held organic certification, coffee prices were up, CCT has established trust in the quality of its product and consumers now knew the quality of Timor-Leste coffee. As of 2008 CCT owned its own land/infrastructure, however no dividends go to individual growers; they use the money to replace machinery, equipment, factories, renovating etc. Results from the pilot study showed that Timor-Leste growers are not selling to just one buyer, including CCT – this surprised the Enterprise Development Advisor:

“Our members only sell to us, that is part of the requirement of being part of the cooperative and our members know that” (personal communication, July 13, 2010).

Meeting with Ministry of Agriculture and Fisheries (MAF)

On July 15th a meeting was scheduled with the National Director of Policy and Planning at MAF as this was the person that was recommended by UNTL for the Australian research team to discuss the project with. A briefing was given of Southern Cross University’s activities in Timor-Leste and the pilot study findings report was explained as well as the plans for the Timor-Leste Coffee and Poverty Project. The GIS workshop for UNTL in November was discussed and the invitation extended to staff at MAF to also participate. Also what questions MAF would be interested in having answered through the Timor-Leste Coffee and Poverty Project were raised. It soon became apparent however, that the project and GIS training should be discussed with the Industrial Crops Senior Staff member so this person was contacted and joined the meeting. This staff member acted very disinterested at first while the project was explained to him. We had to talk through a translator and his responses were very short and dismissive of the project:

Translated: “You come here to do this project but you do not understand, everybody coming here but they don’t understand” (Industrial Crops Senior Staff member, personal communication, July 15, 2010).
However after a few minutes of explaining that Dr David Lloyd from Southern Cross University (who was present) had been involved in Timor-Leste for a number of years and had helped establish ETCI and had also helped with the pilot study, barriers were broken as he had heard of his work and had established a context for the group. He then became very interested in the project and a lot more forthcoming with information and involvement in the discussion and started speaking in English to us, of which he was quite proficient. This change could be attributed to the discussion that was presented in Chapter Three on how research has been conducted in Timor-Leste over the years, quick projects with often little true engagement and minimal follow-up.

It was arranged to have a GIS team from Southern Cross University come to Timor-Leste in November to train the MAF staff and UNTL staff for about a week. This training would rely however on cooperation and the sharing of information and datasets to make it relevant and also improve the research. A follow up meeting was scheduled for the 21st July to further discuss the project, look at the draft survey and look at the GIS information the ministry had at ALGIS.

**Joint Meeting with UNTL and MAF**

The meeting on 21st July involved the researcher, the project “champion”, the Industrial Crops Senior Staff and additional MAF staff. While initially this meeting was also to look at the GIS data it turned into solely another briefing for the Ministry staff. The champion translated which was necessary to the understanding of the staff members as his English was very good plus he understood the subject matter. For researchers working in a cross-cultural setting it is extremely important to select an interpreter who has understanding of the culture as well as the area of study (Westby and Hwa-Froelich, 2003). The staff present at this meeting were involved in the coffee section of the department as well as a staff member who was heavily involved in the field work aspect of the department's activities. The person that was originally meant to be present to discuss GIS had been promoted to Director of Research so new arrangements now needed to be made to discuss the GIS data. However it was learned during this meeting that most of the information and maps were from 2002/2003 and produced by the Australian Army and had not been updated since. The department had a few older model GPS units (Garmin Rino 530HCx) however these would not be able to be used for this project as they were kept solely for ministry projects. They were very keen on training for GIS and also for the use of GPS and survey collection.
Coffee grower household survey development

Over two research trips (July and November 2010) the draft Household Survey Round 1 was discussed and modified between the Australian research team, UNTL and MAF to work on question inclusion, format and translation. To ensure that the research would be understandable and culturally appropriate a number of questions were discussed that included:

- Should the household mother or father be interviewed
- Should the question and answer sheets be separated or combined
- What categories should be used for relationship to the interviewee
- The best overall structure to make the survey easy to complete
- How to define how long a household has lived in the area
- The need to have a master example of a survey that is filled in completely for training
- The rationale for surveying before and after the coffee season
- Who needed to be contacted in the districts – i.e. district and subdistrict administrators
- Might have to abandon linking GIS to the household surveys

These questions and modifications made were discussed primarily while in-country as email communication was not very effective. The Timorese champion received the draft survey and made comments, however receiving these back did not happen often so the time was utilised face to face when discussions could take place more effectively. However for on-going relationship purposes, on-going communication via email to UNTL allowed the collaborative process to continue in an informal manner through quick questions.

GIS Training for UNTL and MAF staff

Before continuing with the household survey aspect of the Timor-Leste Coffee and Poverty Project a research trip from November 8 – December 4, 2010 was conducted. Both UNTL and MAF had expressed interest in attending GIS training. MAF has the department ALGIS, however not all of these staff members were trained in GIS; some were employed to conduct the ground-truthing or basic data entry. UNTL did not have the facilities to run GIS training at their University however they were also interested in expanding their knowledge of GIS. As negotiated during the previous research trip, the

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4 SCU reviewed GIS data provided by ALGIS however issues with incorrect metadata, incomplete datasets and disorganised files resulted in this GIS aspect of the project being outside the scope of this thesis. Files were however organised and cleaned up where possible and presented back to ALGIS
training would utilise the ALGIS database to make it more relevant to the participants and it would also be available for the research team to utilise for the **Timor-Leste Coffee and Poverty Project**. To help determine the effectiveness of the training it was also planned to survey the participants after the training was complete.

This cross institutional collaboration formed an important foundation for conducting the household surveys as these two groups do not often use each other's skills (UNTL lecturer, personal communication, 12 July, 2010). The flexibility of PAR allowed this added element to enhance the research project as it was now an opportunity to strengthen working ties with these organisations and build relevant, and requested, capacity building to the Timorese research partners.

During November 2010 two geospatial workshops were conducted in Dili, Timor-Leste by a team from Southern Cross University. Eleven participants attended the first, a five day training workshop in geospatial data handling and analysis at ETDA, while fifteen were provided fundamental training in the use of GPS at the Ministry of Agriculture.

Considerable effort was made during these workshops to cross language barriers, and the help of translators was essential to the success of both courses.

**First workshop at ETDA**

**Day1**

The first GIS workshop was conducted at the East Timor Development Agency (EDTA). ETDA was chosen as the training space as it was one of the few facilities in Dili that was equipped to host training workshops and it had the mission to strengthen capacity in Timor-Leste. At the time of this workshop it was still building experience in facilitating groups so this was also a chance for the **Timor-Leste Coffee and Poverty Project** to support a local NGO in addition to conducting training activities. The training workshop was conducted from the 9th to the 13th of November, 2010. Of the eleven participants, eight were from ALGIS (within MAF) and three were from the UNTL. The desire for GIS training had also been expressed by MAF staff from departments other than ALGIS, however none of these staff members were at the training and when ALGIS staff were asked why, they responded that just ALGIS staff members had been sent and no one else from MAF was attending. Some of these staff members also did not know why they were there as they were following directions from higher management to attend, however at the start of the workshop a number of these participants expressed their eagerness for the
training. Aycan (2006) states that paternalism is approved of in hierarchical societies and is established firmly in indigenous psychologies in Pacific Asian regions. In an organisational setting it requires the superior to provide guidance to subordinates who in turn are loyal and defer to the superior. Friday et al. (2006) note that under Indonesian rule a top-down approach that was authoritarian was established in Timor-Leste with Brunnstrom (2003) believing that it is essential to have bottom-up approaches particularly for post-conflict countries.

In the training room at ETDA there were originally 10 computers; two more were brought in as two staff members from the Department of Disasters heard about the training and requested that they could also participate. The logistics of conducting this training was mainly in the set-up i.e. computers needed to be disconnected from the network so files could be saved knowing the power was intermittent. When the training started, technical problems meant that only four computers were working, so these and three laptops from the Australian research team were used. An interesting conflict in expectations occurred as the instructors had developed a scaffolded learning program however, only half of the participants arrived on time, the other half were half an hour late and a few did not attend that first day. This meant that half the trainees were engaged and ‘on-track’ while the others were desperately trying to catch up.

While a translator was present for the training workshop, there were difficulties as the translator did not have a clear understanding of the topic which created challenges in transferring knowledge and understanding. The participants did have an understanding of enough English to follow basic instructions and participate in introductions. During the introductions a number of participants expressed a lack of confidence in their ability to participate in the training and use GIS. The team from Southern Cross University was introduced and it was explained that “we teach by talking and interacting and that we learn from our students as well and teach one another.” This was important as while it may not have been possible to have equal power relationships in this setting, a more collaborative approach and different teaching style was aimed for. The training program was an overview of GIS, a brief introduction to spatial analysis and GIS problem solving potential. To make the training more relatable a specific example was discussed; how can we manage disasters using GIS? Timor-Leste data had been made available by ALGIS and the topic Geoinformatics for Disaster Management in Timor-Leste was discussed. Simple
summaries of the information were written in English as well as visual representations on a whiteboard as the training progressed.

Information that was also covered on the first day was how to install ArcView, the two different types of data (vector and raster) and an introductory discussion on how to manipulate this data. It was a balance to provide enough information to keep the participants interested without getting them overwhelmed. The feedback after this first day while positive also indicated strongly that the pace needed to be slowed down:

“For thank you for the teaching, but we need to go slow so we can practise more to understand what it is we are learning. Sorry that our English is not better to go faster” (Participant in GIS training workshop, personal communication, 9 November, 2010).

While this feedback may initially appear as a negative, it actually demonstrates that the participants felt enough at ease and not intimidated to give this honest feedback at this early stage of the training so in this way it can also be viewed as a positive in the study. The training was then adjusted at this stage to more effectively suit the participants’ needs for the following day and remainder of the training. This adaptability relates strongly to the strengths and lessons learned in PAR, to adapt and make the necessary changes to provide more effective implementation.

Day 2 – Day 5
It is often commented in Timor-Leste about people not turning up on time. On the first day of training there were some students missing and late, however on this second day not only were all students present, they were all early. Unfortunately the class could not begin on time however as all computers had to have the GIS data re-installed. The efficiency of completing this task however was very professional and it was decided at this point that ETDA would be the training location for the household surveys.

From the lessons learned from Day 1 it was decided to proceed straight to hands on practical training rather than continue with any lectures. The lecture components were not translating well due to their technical content, so step-by-step training with lots of informal discussion was the new direction. The examples and content in the lectures were too foreign and the translator did not have the knowledge to translate certain aspects into Tetum, with an added challenge that the translator did not speak Indonesian which made it
difficult to translate technical aspects. The GIS dataset was reduced to just the essentials needed for the training and only examples from Timor-Leste were used to maximise the relevancy. The use of screen grabs to highlight steps was an effective tool during the training to draw on them on demand to explain examples, and also for the students to receive a copy for their own notes. GPS training was also conducted on Day 5 through practice using GPS devices, provided by the Australian research team, outside the training room to record GPS points. This hands-on experience was effective in teaching the basics of GPS use; all students logged at least one point and named it successfully within the GPS devices. At the end of this last day of training all students received a certificate to acknowledge the hard work that they had completed.

Second workshop at Ministry of Agriculture and Fisheries (MAF)
The second workshop, attended by fifteen participants from MAF, was a one day introductory course in GPS and was held at the Ministry of Agriculture and Fisheries (MAF) at the request of the Industrial Crops Senior Staff member on the 18th of November, 2010. This workshop was arranged with very short notice, however it was important to provide this opportunity in order for continuing the relationship and capacity building process and gaining a better understanding of the skill sets in these organisations. This short notice was due to a breakdown in communication within MAF and then between MAF and the Australian research team. The contact person from MAF who originally organised the staff to attend the GIS training only followed through with the ALGIS staff members and never consulted the other interested staff within MAF. These staff and the Industrial Senior Staff member were then waiting to be contacted about the training, however they themselves did not follow up on the status of this which resulted in the GPS training being organised on the same day it was delivered.

The electricity was not working when the Australian research team arrived which meant that the data projector could not be used. However the Australian research team were prepared and had brought large sheets of butcher’s paper to facilitate graphic communication in case of any power outages which were a regular occurrence. None of the participants had used a GPS before; it was acknowledged that when it is required for their projects, the staff from ALGIS come to use the GPSs. During the training workshop it was learned that GPS units had been given to MAF from an aid organisation (it was not known by anyone present at the training which aid organisation), however no training had been provided, thus they had stayed in the boxes mainly unused. One of the main problems
was that the chargers were missing, and as all the instructions were in English it was not easy for individuals to teach themselves. The manuals did however include images, so a discussion was raised with the training participants on how to use the tools available to their best advantage. Therefore, through the use of graphic communication the trainers used the images in the manual to explain how to use GPS devices. Graphic communication quickly became key to the whole day.

Once it was realised how much information could be learned from the images, the participants looked visibly more at ease and excited about the prospect of utilising the GPSs. As only a few of the GPS devices had any charge it was decided not to go outside to mark waypoints, instead the features were explained in groups, through the images in the manuals, with the few operational GPS devices. It was also explained how to transfer data from the GPS devices to a computer. It was at the very end of the training session that the GPS chargers were found by another staff member in a separate box. This is just one example of ineffective aid where it provides equipment without the skills needed to utilise these resources, resulting in ineffective resource management. Easterly (2006) comments about aid being focussed on disbursements instead of the results for which the aid is intended (cited in Williamson, 2010).

5.2.3 Observations from meetings, GIS training and the coffee grower household survey development (Phase 3, PARC 2)

This section explores the third phase for PARC 2 (Figure 20). The researcher’s observations on the series of meetings held, as well as the outcomes of GIS training are discussed. The coffee grower household survey development is also addressed.

![PLAN ACT OBSERVE REFLECT](image)

Figure 20: PARC Finder – observation phase of PARC 2, observations on the outcomes of meetings and training to develop the Timor-Leste Coffee and Poverty Project

Conducting effective meetings

Conducting effective meetings in any research project can be a difficult task. Conducting meetings in cross cultural contexts with language barriers can be even more difficult. The meetings with UNTL and MAF were not rushed and worked most effectively when the
“champion” was present. This consistency provided clear direction to the meetings and helped move the process forward. It was discovered that the level of training in these departments was lower than was originally predicted and therefore changes to the project needed to be made. The inclusion of the GIS training program conducted prior to the training and implementation of the household surveys was an important part of the project, in order to improve skills, provide an early opportunity for collaboration, deliver a platform and opportunity to further refine the survey before its implementation and to create trust between all parties. Establishing and maintaining trust is essential in cross-cultural and PAR research (Hepi et al., 2007; Moller et al., 2009). By allowing the PAR process to guide the research direction new opportunities presented themselves, which enhanced the idea of being open-minded to where the process may lead. In PAR when issues arise, as the process is dynamic it allows for adaptation and revision (Mackenzie et al., 2012).

**CCT Meeting**

The meeting with CCT was much less complicated as the Enterprise Development Advisor was Australian, therefore English communication was simple and having a common background made the simplest things such as relatable examples or humour in discussions much easier. This becomes far more difficult in cross-cultural situations, especially with language barriers which can also make it harder to establish fundamentals in the relationship such as trust and good will (Tenzer, Pudelko, & Harzing, 2014). The outcome of the CCT meeting was primarily on the role that fair trade was playing. According to the Enterprise Development Advisor, fair trade had essentially been “a let-down” and the best outcome and feeling surrounding it is that “fair trade needs to change.” The issues that CCT had with fair trade are a good example of the problems that can surround certifications. There are many different ones available in agriculture and at this point CCT was still interested in seeking these out to determine the pros and cons of each in order to gauge if there was a more appropriate model for their cooperative in Timor-Leste. Fair trade is very specific and restrictive with its conditions. One problem CCT faced was the fair trade age limit being 18, therefore anyone under 18 cannot be a paid employee. However in Timor-Leste the coffee harvesting is an important community activity that links people back to their village as they have “the culture of the harvest.” This is just one of the criteria that has made complying with the rigid fair trade conditions a difficult task in Timor-Leste for CCT.
**Coffee grower household survey development**

Household Survey Round 1 was further developed and a final draft completed during this PARC in collaboration with staff at UNTL and MAF. A number of questions were discussed in-country which made creating a relevant and culturally appropriate household survey much easier. It was discussed that setting the context for the whole survey as well as individual questions would be crucial to the survey training (as there would be a mix of people experienced and inexperienced in research) and that it would be very important to have a translator that understood the topic and questions well – it was therefore decided jointly between the Australian research team, UNTL and MAF that the “champion” would act as translator. This decision was based on two criteria, one being that this person was familiar with the topic and survey, and two, that this person had previous formal translating experience.

It was also decided to develop the training material in English and send these to the translator before training began to avoid any confusion with attempted translations. The methodology was discussed in general that households would be surveyed twice and by the same surveyor, and that random sampling would be conducted in the sub-districts of the district of Ermera. The final selection of Sucos in the sub-districts would be conducted at the training session, as well as any minor changes that needed to be made for clarification on the survey in order for all participants to be involved in the process, and so that the research would benefit from their invaluable input and opinions. In cross-cultural PAR a basic requirement is respecting the knowledge and contributions of all participants (Moller et al., 2009). One such insight was the proposed survey date as this had to be adjusted to fit in with when people would be back from Christmas breaks from the districts.

**Outcomes of the GIS training**

Even with the computer issues occurring in the beginning, the organisation at ETDA was impressive. Not many organisations run as smoothly in Timor-Leste so it was now known that there was an appropriate site for the survey training for the Timor-Leste Coffee and Poverty Project. All participants were quite reserved, especially about using English so they asked most questions through the translator in the beginning. Some of their background skills they identified were mapping, databases, surveys on farming, remote sensing, collecting meteorological data and data preparation. However they mainly identified that they face infrastructure difficulties and that they rely on one person in the office at ALGIS to show them what to do.
“When we need maps or information [name] gets it, he knows where they are so we don’t need to know” (Translated from GIS training participant, personal communication, November 14, 2010).

Like many organisations around the world there are key people that know the system or organisation better than anyone. In Timor-Leste however, these roles are potentially more pronounced due to the majority of those who had advanced education and skills leaving the country after the violence of the referendum in 1999 (Lothe & Peake, 2010).

The training in GIS was successful in providing some basic skills, but perhaps more importantly, in providing confidence to participants since training was adapted to appropriately teach in this environment. At this stage it is worth mentioning what was working well and what equipment was found to be the most useful. Encouraging the students to work together whether in pairs, small groups or even through an entire class discussion worked much better than working as individuals. Repeating the same activity with different examples to enforce the skill was also very important in building confidence and skills. The training examples were most effective when using ones specific to Timor-Leste and asking the class to provide the Southern Cross University training team with their own knowledge on these topics. Having additional people to act as demonstrators while the teaching happened was important for making sure all students could keep up. It was also found that the combination of using both a data projector and a whiteboard to reinforce important points or to more freely depict what was being discussed was the most effective. Graphic communication was an essential component in overcoming language barriers, however it was also essential to have a translator. As each day progressed the students became more visibly happy and confident. However after lunch not much was being achieved as participants became tired. A summary report of the training is available in Appendix D.

A post-training survey of both geospatial workshops showed that only 23% participants spoke some English. All participants spoke Tetum (100%), with Bahasa Indonesia (88%) and Portuguese (15%) also spoken to varying degrees. The survey also showed that few participants had prior experience of GIS, with 84% of respondents indicating they had not used GIS before, 15% had prior experience, with one participant not responding to this question. Participants had slightly more experience with the use of GPS with 27% of respondents indicating they had used GPS in the past. Eighty-eight percent of respondents
indicated they would like more training (three participants did not respond to this question). Qualitative responses indicated that 23% would like more training in remote sensing, 38% would like more training in GIS, 35% would like more training in GPS, 19% would like more training in spatial analysis, 12% in data transfer and 8% in making maps. The training received a high score in the evaluations with an average score of 4.6 out of a possible 5 in response to the question “overall I am satisfied” with the experience of the training. Keys to making the teaching effective were giving simple examples, using graphic communication, interaction, hand gestures, name tags and encouraging questions from the participants.

5.2.4 Reflections on Participatory Action Research Cycle Two (Phase 4, PARC 2)

This section explores the fourth and final phase for PARC 2 and the researcher’s reflections (Figure 21) including reflections on participatory action research for empowerment. The pilot study conducted in 2009 highlighted the participatory action research cycle question, “Can certified coffee alleviate poverty for coffee growing households?” It was hoped this question could be further investigated in specific detail as a result of the Timor-Leste Coffee and Poverty Project. However since the completion of the pilot study, the main coffee cooperative CCT, having Fair Trade certification, which would have provided the avenue to investigate this question, had since abandoned this certification. This highlights the strength of action research as an important and essential approach in this type of research, since the researchers were prepared for potential changes to occur and for the research to take new directions. The study could still go ahead, however a main focus had now changed.

![PLAN ACT OBSERVE REFLECT]

Figure 21: PARC Finder – reflection phase of PARC 2, reflections on the outcomes of the meetings held with stakeholders to develop the Timor-Leste Coffee and Poverty Project

The key aspect that came out of the meetings conducted with UNTL, CCT and MAF was trust. Broken trust from past relationships with researchers and the building of trust for this project. An outcome of the meetings conducted had been the desire of both UNTL and MAF to receive training in GIS when the spatial component of this research was discussed.
Therefore following the theme of participatory action research, the project was adapted to include this requested capacity building element and a GIS training workshop was conducted with this cross-institutional collaboration forming an important foundation for conducting the household surveys.

From the meetings conducted and the success of the pilot study the feasibility of the Timor-Leste Coffee and Poverty Project was strong. Obstacles such as available participants to conduct the surveys, translation challenges, finding a “champion” and establishing and maintaining a trustful and mutually beneficial relationship had been identified and addressed. Building on this trust and relationship was achieved by creating and implementing the GIS training program to respond to the requested need for capacity building.

Through conducting the geospatial training workshops, multiple outcomes were achieved. It provided capacity building that had been requested, it allowed two departments that do not often collaborate to work together through this opportunity (UNTL and MAF) and thus more accurately ascertain potential resources and contacts and provided the opportunity to more effectively develop the training program for Household Survey Round 1. The sharing of resources outside of this project was discussed by two members during the GIS training workshop, one from UNTL and one from MAF. The UNTL students needed to get more field work experience so they started discussing if this could be linked in with the ministry extension officers. Both parties were excited by the idea.

The GIS training also allowed trust and the relationship between all organisations to grow in preparation for surveys for the Timor-Leste Coffee and Poverty Project. It also brought into question the accuracy of the GIS information that ALGIS provided which resulted in the GIS component of the project occurring outside the scope of this thesis, though GPS waypoints would still be gathered to spatially locate households surveyed.

Reflection on the role of the researcher

At this stage the strength of using the approach of participatory action research was evident in terms of adding value and flexibility to the research process. It could be seen at this stage that a number of PAR cycles would be conducted during the Timor-Leste Coffee and Poverty Project which would provide benefits for improving the research and relationships at each stage.
and each cycle needed to be treated with the importance of being a participatory action research cycle rather than simply as a means to the end, i.e. obtaining household survey data.

So much emphasis in science and research goes into the planning stages, of identifying and complying with rigid methodology. While this often leads to solid outcomes, it is not always the most appropriate process to lead to real world outcomes. By following PAR and being flexible a need was identified and a solution was able to be found that would not only meet this need (i.e. the GIS and GPS training) but would ultimately enhance the overall project by promoting collaboration and relationship building before the survey collection took place. Meetings are an important part of working in Timor-Leste. Almost every meeting I have attended, I have noticed the care that has gone into preparing the room and offering comfort to the guests. From my journal:

“As we entered the office it was evident the care that had been taken to create the space, tais had been laid on the tables, water and food had been provided, the best chairs were on our side of the table – the respect shown was not unnoticed and I only hope we are showing the due respect back.”

The respect shown needs to be reciprocated. Timor-Leste is said to run on “Timor time.” The meetings are often not that rushed, often do not start on time and people may be missing. However if you have the time another meeting to discuss your needs will be scheduled and another opportunity presents itself:

“Still waiting to hear back from the Ministry, last I heard the power had gone off again and now [my contact] is not answering the phone. If I don’t hear back I might just take a taxi tomorrow and see if I can find
[my contact] and organise a time for a more formal meeting while I am there."

Westby and Hwa-Froelich (2003) discuss the need for cultural sensitivity in relation to concepts of time. They give an example of communities in Southwest American Indian tribes where the priorities change as events occur, so you are expected to accept that delays will occur and just try again.

Research projects would often see this as a waste of time and resources, however it also presents opportunities. The opportunity to build relationships, demonstrate commitment, the opportunity to demonstrate sensitivity for changing circumstances and the opportunity to have informal discussions that might not have otherwise happened. I was already much more comfortable with the changing circumstances compared to the first research visit where I had become frustrated. I had to change my own expectations and suddenly it seemed everything was running a lot smoother.

During the informal trip to the Ministry to try and organise another meeting I then had the chance to talk to the group Seeds of Life and hear about the work they are doing. Walking in I was asked to introduce myself in Tetum which I could just do and it really hit home that I needed to improve my conversational language skills. I therefore made it a priority to complete an introductory basic Tetum language course in Dili once the GIS and GPS training had been completed to at least learn more conversational Tetum in order to improve my interactions while in Timor-Leste.

It is important to remember why research is conducted, to improve and better understand situations, people and the world. It should not come at the expense of the people involved. This is extremely important to remember when working in a cross-cultural setting and even more so in a post-conflict
nation where colonialism has been present in different forms. International researchers need to be careful not to become another form of colonialism. Smith (1999) states: “From the vantage point of the colonized...the term “research” is inextricably linked to European imperialism and colonialism” (Smith cited in Goulding et al., 2016).

Conducting the Geospatial training in Timor-Leste was a very valuable opportunity for myself as a researcher and teacher and also for the project as a whole. I thought I was prepared through my previous two trips to Timor-Leste about how the training may unfold and unfortunately one of the things I had learned was that it can be very difficult for a woman to work in such a patriarchal society. However my experience thus far had also shown me the value of trust and relationship building. By allowing the trust to build over time I found it much easier to have my voice heard and respected for the contributions I could make. Change takes time and it takes building blocks. The Geospatial training allowed my authority in my role to grow and therefore, this set a strong foundation for conducting effective training for the next stage in the research. It may seem like a difficult balance to achieve, authority without dominance - however by working together from an early stage in the project it happened naturally. Views and opinions were shared, refinements made and mistakes laughed about on both sides. The trust and relationship grew even though the research trips were short and an extended stay was not occurring.

The hesitation that was present by many of the participants in the training due to their level of English was much more understood by myself after I participated in the two week Tetum Language course. The feelings of doubt, not wanting to humiliate yourself in front of others and the different way of thinking was all very difficult. By having support and encouragement the
process was challenging but enjoyable and gave myself a better insight into working in a different language and the culture through the influence of language. It also helped the relationship I was growing with the Timorese research team who were very happy to hear that I was completing the Tetum Language course.

**Reflection on participatory action research for empowerment**

The focus for PARC 2 was to respond to the need for capacity building by addressing ‘how to build relevant capacity building into a collaborative community based project’. This was addressed by collaborating with UNTL and MAF staff to discuss training needs for the household surveys and also through conducting geospatial training for UNTL and MAF staff. The PAR approach allowed for an easier identification and addressing of community needs (Friday et al., 2006). Without this approach the mention of GIS training may have been dismissed as not important, and only household survey training would be completed. However the geospatial training added value both in terms of capacity building and team building. This was especially seen in the increasing confidence of participants during the training and the further development of trust, where promises were kept and expectations met, through the Australian research team delivering the requested training program. The capacity building which resulted from the training program was empowering for participants as well as for the researcher as skills developed together, although being different skills.

These outcomes demonstrate the value of building an empowerment and participatory focus into the project targeting organisations that are leaders in the Timor-Leste agricultural community so they continue to grow their own capacity to develop the agricultural sector in a culturally appropriate way. This was also experienced by Friday et al. (2006) who discuss that in an agricultural development project in Timor-Leste that some Ministry staff from MAF appreciated an opportunity to work as educators rather than authority figures. It is these leaders in agriculture that can create change and thus this was the main focus for bringing empowerment into the project. This is why it was chosen to collaborate with UNTL rather than ETCI for the main project. Empowerment themes that have arisen from participatory action research cycle two at an individual, organisational and community level are outlined in Figure 22.
5.2.5 Evolution in participatory action research methodology

The task to further develop the **Timor-Leste Coffee and Poverty Project** and conduct Geospatial training unfolded in this PARC. While the initial goal was to focus on developing the household surveys (which was planned to have a large focus on the impact of fair trade in Timor-Leste) and organising participants to conduct the surveys, through the course of several meetings a new element entered the research project. This element was the desire of staff from UNTL and MAF to receive GIS training. Through the GIS and GPS training a number of lessons were learned to help improve our training approach while working in Timor-Leste as well as being a capacity building exercise that was requested by the Timorese research collaborators. This provided the opportunity to strengthen ties with these organisations before conducting the household surveys and to build trust and capacity building further into the project. A ‘champion’ had also been identified and Household Survey Round 1 was also completed as a final draft, however it was decided that the absolute finalisation of the survey would take place during the training in case questions needed to be further clarified and to also engage and validate the knowledge and insights of the participants that would be implementing the survey.
Relationship ties were strengthened during this PARC, the survey refined and the training material had begun to be designed, strongly influenced by the geospatial training and outcomes. The next PARC will report on the survey training that was conducted and the implementation and initial outcomes of Household Survey Round 1 (Figure 23).

![Figure 23: Evolution in participatory action research cycles to PARC 3](image-url)
5.3 Participatory Action Research Cycle Three: Pre-coffee harvest research cycle

In Participatory Action Research Cycle Two (PARC 2), the focus was on participating in effective meetings and conducting geospatial training when working in a cross-cultural context with the added challenges of language and Timor-Leste being a post-conflict nation. The task was specifically ‘how to build relevant capacity building into a collaborative community based project’. The geospatial training was an unplanned outcome of these meetings and had been requested by UNTL and MAF as a capacity building exercise and was done to show our team’s commitment to our satisfying our counterparts’ needs in the project. This cross institutional collaboration formed an important foundation for conducting the household surveys for the Timor-Leste Coffee and Poverty Project as these two groups do not often use each other's skills. The flexibility of participatory action research (PAR) allowed this added element to enhance the research project as it was now an opportunity to strengthen working ties with these organisations and build relevant, and requested, capacity building to the Timorese research partners. Through the geospatial training workshops, participants learned theory and skills in geospatial data handling and analysis and fundamental training in the use of GPS. Lessons were also learned by the researchers on how to refine training methods in this cross-cultural context with language and resource challenges. These lessons included using simple country specific examples, graphic communication, and encouraging questions from participants. By conducting these training sessions, relationships were strengthened with both UNTL and MAF. The important aspects of follow-through on promises and a strong collaborative relationship which is crucial to PAR as discussed by (Fox & Gershman, 2000; Hepi et al., 2007; Westby & Hwa-Froelich, 2003) were achieved.

PARC 2 also involved conducting meetings with the project ‘champion’ and additional Timorese team members to further refine the household surveys for the Timor-Leste Coffee and Poverty Project. The Australian research team brought the skills of survey development, academic integrity and ethical considerations while the Timorese research team from UNTL especially brought cultural context, logistic advice and additional country specific knowledge, while acknowledging the academic framework. The principles of PAR include acknowledging and utilising the skills and knowledge of all the participants (Mackenzie et al., 2012). As discussed in Participatory Action Research Cycle One, an identified need was for the researcher to improve local language skills so a Tetum
language class was also attended in order to improve conversational language skills in order to continue improved engagement for the research project. Brunnstrom (2003) commented that many Timorese feel it is arrogant and shows a lack of interest in the people when internationals do not learn Tetum.

Based on the lessons learned in the previous two action research cycles, Participatory Action Research Cycle Three (PARC 3) outlines the training and implementation of Household Survey Round 1 (Figure 24). The PARC 3 problem definition and cycle summary are outlined in Figure 25. The planning phase of this PARC discusses the process of constructing Household Survey Round 1 and the needs identified collaboratively for the survey training and implementation. The action phase outlines how the training was conducted and how the surveys were implemented. The observation phase discusses the effectiveness of the training and the survey implementation, and preliminary results. Finally reflection is addressed by examining the training and research methods used in this participatory action research cycle in the context of opportunities for empowerment within the post-conflict context. This PARC concludes by introducing the next stage of the research which has been shaped from this third PARC.

Figure 24: Evolution in participatory action research cycles, now at PARC 3
**Problem Definition:**

*Collaboration for Household Survey Round 1 training and implementation for the Timor-Leste Coffee and Poverty Project before the start of the Coffee Harvest Season*

![Figure 25: Participatory Action Research Cycle Three (PARC 3) problem definition and cycle summary](image)

5.3.1 **Planning phase for Household Survey Round 1 (Phase 1, PARC 3)**

This section covers the planning phase for Household Survey Round 1 which forms Phase 1 of PARC 3 (Figure 26). The planning for the training and implementation for Household Survey Round 1 is discussed and the new problem of ‘*how to conduct training and survey implementation in a collaborative community based project*’ is introduced. The communities involved in PARC 3 are outlined in Table 7.

![Figure 26: PARC Finder – planning phase of PARC 3, Household Survey Round 1](image)
### Table 7: Communities involved in Participatory Action Research Cycle Three

<table>
<thead>
<tr>
<th>COMMUNITY</th>
<th>Role and/or responsibilities in project</th>
<th>Power dynamic and/or needs</th>
<th>Tools used/empowerment gained</th>
</tr>
</thead>
</table>
| Australian Research Team | • Southern Cross University and Monash University develop final survey design and conduct survey training | • Due to the status of the principal investigators from SCU and Monash they held academic status and authority which was difficult for counter parts to challenge in regard to research methodology.  
• In charge of training | • Use graphic communication, translator, context specific examples, collaborative approach.  
• Counterparts received training in research ethics, survey design and need for unbiased sampling |
| ETDA                | • Provided training facility                                                                               | • Needed experience facilitating groups                                                    | • Gained experience and a reference for how well it was organised, glad we came back          |
| MAF                 | • Collaborate on final survey design, training and survey implementation                                   | • Followed UNTL lead as they were the academics  
• Provided support and on the ground experience  
• Conducted surveys                                | • Experience working with UNTL  
• Survey training and experience                    |
| UNTL                | • Collaborate on final survey design, training and survey implementation  
• Survey team leaders                                | • Provided translator  
• Were team leaders  
• Understood academic integrity of survey  
• Conducted surveys                                      | • Experience working with MAF  
• Survey training and experience                       |

**Awareness building**

Through collaborative meetings and communication with UNTL and MAF, in combination with lessons learned from the pilot study discussed in PARC 1 and the geospatial training conducted in PARC 2, the survey for the *Timor-Leste Coffee and Poverty Project* was developed, as well as a better understanding of training needs. Household Survey Round 1 (Appendix E) aimed to look at the economic and social wellbeing of coffee growing households in the main coffee growing district of Ermera and examine the factors that affect the capacity of those who rely on coffee as their main livelihood, to move out of
poverty. The information needed from the UNTL and MAF collaborators to develop the
survey mainly was gathered during the research trips in PARC 2. While the aim had been
to continue the collaboration process in-between research trips, due to internet speed and
access difficulties within Timor-Leste at the time and the difficulties of receiving
responses to emailed questions, the majority of the work had to be completed while in-
country. This was important to learn as it meant that time management while in-country
was vital in order to maximise opportunities for the successful implementation of the
research project. Often in research meetings a task list can be constructed and information
gathering delegated with the plan to email and consolidate the information electronically
and send to all research partners. However in this context with electricity outages, poor
internet, inconsistent communication, and language barriers/considerations when not in-
country it was important to modify and change the survey during the meetings and
document the relevant information from the Timorese research team so this could be used
to complete modifications and inform changes once back in Australia. This draft of
Household Survey Round 1 would then be finalised during the training in case questions
needed to be further clarified and to also engage and validate the knowledge and insights
of the participants that would be implementing the survey. The draft completed in
Australia however, was emailed to the project champion (and a phone call made to alert
that the email had been sent) in order for translation to begin so that enough time could be
allocated to this difficult task. Potaka and Cochrane (2004) comment on the need to
allocate sufficient time to this important part of the survey development, in order to allow
for testing of the quality of the translation. Based on lessons learned from the training
conducted from the pilot study discussed in PARC 1 and the further lessons learned from
the geospatial training in PARC 2, the training schedule for Household Survey Round 1
was designed to be more flexible to the needs that evolved during the training process.
Time was also recognised as a major consideration for successful training so four days
were planned for the training which would be essential in order to obtain quality data from
Household Survey Round 1.

Problem Definition

Conducting household surveys in cross-cultural contexts is more appropriate if
implemented by citizens of the country being surveyed due to cultural sensitivities and
language issues. In the case of the Timor-Leste Coffee and Poverty Project it was
organised for staff from UNTL and MAF to collaborate and implement the household
surveys after training was conducted by the Australian research team. Therefore the problem to address at this stage of the project was ‘how to conduct training and survey implementation in a collaborative community based project.’

Based on the success of the geospatial training conducted at ETDA it was decided to book ETDA again as the space for the survey training. The aim of the survey training workshop was to cover GPS skills, survey technique, methodology, context, perfecting the survey translations and practice conducting the surveys. Based on feedback from the geospatial training, time had been taken to translate key teaching material into Tetum, use simple examples and allow for a surplus of time during the training sessions so that participants did not feel rushed with adequate time spent on understanding all aspects of the survey implementation. The training schedule was planned to be flexible to the needs of the group and to allow the focus to be directed where it was most needed. Participatory action research allows for collaboration to be experienced in a flexible manner and is adaptable to the needs of the participants (Ang, 2014).

5.3.2 Action phase of conducting the survey training (Phase 2, PARC 3)
This section explores the second phase of action for PARC 3 (Figure 27). The final development for Household Survey Round 1 is outlined as well as the training for conducting the survey. Implementation of the survey by the Timorese research team is also discussed.

![Diagram](PARC Finder – action phase of PARC 3, conducting surveys for the Timor-Leste Coffee and Poverty Project)

The research trip to conduct Household Survey Round 1 was conducted from 24th of January to the 24th of February 2011. The survey training workshop ran for four days from the 25th – 28th January and consisted of eighteen participants; nine were from UNTL and nine were from MAF. Training was again conducted at ETDA and they had improved the resources available by providing more adapters and power leads to better suit the training needs.
**Introductions**

At the beginning of the training workshop it was important that everyone, both the Timorese research team and the Australian research team, got the chance to introduce themselves. Introductions allow for participants to learn about each other and establish rapport (Tiberius & Silver, 2001). While many of the Timorese research team consisted of UNTL lecturers who had conversational English, it could still be intimidating to speak English in front of a large group of colleagues and new collaborators as English is not their first language. The Australian members of the team introduced themselves in an informal way, trying to use a few words of Tetum and acknowledge the information gaps that existed for the team in terms of knowledge of Timor-Leste, language and even the research topic of coffee production. However, it was also important to highlight the skills the Australian team brought such as experience in conducting surveys, designing surveys, running training programs and analysing data, to demonstrate the value of our team. In order for the research project to succeed, a strong partnership through collaboration with the Timorese research team needed to develop. Through collaboration, knowledge flows both ways with both participants and researchers having meaningful contributions to contribute (Cram cited in Hepi et al., 2007).

**Survey development**

The two previous participatory action research cycles involved the development, extension and continuation of research relationships with the Timorese colleagues whose perspectives were essential to understanding the issues explored. An important part of the Timor-Leste Coffee and Poverty Project had been to involve the staff from UNTL and the MAF in both the design of the household survey and the methods of implementing the survey and this was continued in this PARC. The project champion acted as both translator and training partner to discuss the survey’s purpose and fieldwork methods. When using the process of PAR, an appropriate translator is extremely important who not only knows the subject matter that is being taught to the participants but also has a thorough knowledge of the culture as well (Westby & Hwa-Froelich, 2003). The purpose of the project, major research focuses and survey layout were outlined, and through general discussion minor changes were made to the survey questions and structure. Proper sampling and survey technique was explained and ethical considerations discussed. All participants had both an English version and translated version of Household Survey
Round 1 during the training workshop to practice entering answers and any questions that arose could be immediately addressed.

All households were based in Ermera (Figure 28). It was decided that a large sample from just one district would allow better comparisons across households and provide a good framework for similar studies to be conducted in other districts in Timor-Leste in the future. The selection of Ermera as the case study region, and then the subsequent Sucos was attributed to the following criteria:

1. Coffee must grow in the area
2. The area must be accessible for the survey team
3. Households surveyed must be confined to one district
4. The area must be free of conflict for safety reasons (for example Lauana in Letefoho was discounted as there were reports of martial arts group activity)

Ermera was chosen as the case study district due to three main factors. Firstly, it is the main coffee growing district in Timor-Leste which made it a sound choice for a coffee study. Secondly, Ermera is the poorest district of Timor-Leste therefore it also made sense for the study as it was investigating links with coffee and poverty. Thirdly, accessibility, as this was the closest coffee growing district to Dili so logistically choosing Ermera made survey coordination more feasible. As discussed in Chapter Four, sampling occurred within the district of Ermera based on a stratified sample with a semi-random selection of clusters (defined by Sucos). Nineteen Sucos were identified to be surveyed for Household Survey Round 1 and Household Survey Round 2 for the Timor-Leste Coffee and Poverty Project (Figure 29).
Figure 28: Location of the survey district Ermera

Figure 29: Location of the nineteen surveyed Sucos
The Timorese research team divided into small groups based on which locations they would survey. Five groups, one for each sub-district, were decided upon and a team leader chosen from UNTL staff was appointed. This was decided as a group; UNTL staff had more expertise in survey technique so the five with most experience became the team leaders. The remainder of MAF and UNTL staff were then distributed between the groups. The team leader was in charge of checking that surveys were completed in the field to a high standard, collecting all surveys and returning them. The breakdown in survey teams are shown in (Table 8):

<table>
<thead>
<tr>
<th>Sub-district</th>
<th>Number of surveys</th>
<th>People in team</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atsabe</td>
<td>144</td>
<td>4</td>
</tr>
<tr>
<td>Ermera</td>
<td>176</td>
<td>3</td>
</tr>
<tr>
<td>Hatolia</td>
<td>191</td>
<td>4</td>
</tr>
<tr>
<td>Letefoho</td>
<td>160</td>
<td>4</td>
</tr>
<tr>
<td>Railaco</td>
<td>129</td>
<td>3</td>
</tr>
</tbody>
</table>

**Translation**

The surveys were originally written in English while in Australia and had been refined through in-country discussions as outlined in the previous PARC. Before the training began for Household Survey Round 1, time had been allocated to discuss the whole survey with the champion (who also acted as translator) on a research trip before the household surveys were planned to take place and at the start of the research trip to conduct the household surveys. Adjustments were made before the research trip took place and then during the training period the survey was discussed with the four other Timorese team leaders (the project champion being the fifth team leader). Again adjustments were made, before discussing the survey with the whole group.

Surveys were firstly translated from English to Tetum, as Tetum is spoken widely within the country (Taylor-Leech, 2009). Surveys were then re-translated into English to improve accuracy of translation. This process was not rushed due to lessons learned from the pilot survey discussed in PARC 1 where this process was used. However, due to the complexities of language in Timor-Leste and based on consultation with the group, the final survey was translated into a mix of Tetum, Bahasa Indonesia, Portuguese and English.
where appropriate throughout. Timor-Leste has high language diversity with at least 16 different languages presently spoken (Taylor-Leech, 2009). Each team member also had the final English version to take into the field as well in case any clarification needed to be determined in the field as all team members could understand written English to the degree that taking the English version would be worthwhile.

To produce the final translated version small sections of the survey were discussed at a time. Firstly each team was encouraged to pick apart the questions and find potential problems with them. To discuss these problems the researcher implemented a mix of techniques including group discussions, role plays and mind mapping to explore how the questions could be interpreted. One consequence of the multi-lingual approach that was used, was that the survey did need to be designed so that responses could be easily translated back into English for analysis so there were not many open ended questions included.

The training workshop was designed to include many interactive activities to give the group ownership in the survey development process. The group helped in the final translation of the surveys, assisted in determining the study areas and devised activities in which they could best practice completing the survey. One such activity involved role plays in front of the group. One team member would ask the questions, the other would answer (sometimes pretending to be a very difficult respondent). Senior lecturers from UNTL led discussions based on these role plays and brainstorming on how to best deal with difficult situations, and how to get the most out of the whole process.

**Mind mapping for research**

Mind mapping was utilised as a tool to cross language barriers and encourage participation and non linear thinking from the Timorese survey team to explore the expectations, knowledge, experiences and issues surrounding the survey process (Lloyd, Boyd & den Exter, 2010). This is a similar method to that used by systems thinkers with communities, where situations are modelled collaboratively (Carlsson, 2015). To begin the mind mapping process, ideas and challenges in the coffee sector were explored firstly with English and Tetum used (Figure 30), followed by the survey design. The coffee sector was chosen first, to help develop discussion around the context of the survey and act as a warm up activity that would help explain the concept of mind mapping and allow people to contribute in an engaging and encouraging way. This then allowed a more detailed
discussion to unfold about the survey design highlighting any issues and challenges that were expected to be present.

Figure 30: Mind map of coffee with English and Tetum

During the mind mapping activity from an open discussion, one aspect that branched out from issues that may be encountered was the rules that should be followed when completing the surveys. The list of things to keep in mind that was created by the group included:

- Carry an official letter from UNTL explaining the survey
- Attitude was very important to obtain good data and for the surveyors to be welcome at the households. Be respectful, understanding and friendly
- Be familiar with the household being surveyed, have a friendly chat at the beginning
- Remember that there are no “right” answers, do not judge
- It is OK to clarify responses and rephrase for correct meaning if necessary
**GPS training**

GPS training was conducted so that all household survey results could be entered into a geographic information system (GIS) based on their location and against a database of variables. The training involved a basic tutorial outlining the main functions of the GPS. No knowledge was assumed and the training covered changing batteries, turning on the GPS device, checking datum settings, obtaining a satellite signal and how to navigate through the screens when recording GPS waypoints. Almost half of the Timorese research team had attended either the GIS or the GPS training workshops discussed in PARC 2, so those with GPS experience assisted those without. A handout of GPS guidelines was also given which was in English since the GPS settings were also in English. This gave the participants the opportunity however to take notes in their own language as the training occurred and check that these made sense with the Australian research team, the project champion and each other. Collaboration between all participants was strongly encouraged and as a group it was discussed the best way to record notes so everyone understood.

Divided into the five survey teams, the participants then completed practical activities recording waypoints of five specific objects outside. These waypoints were then recorded on the whiteboard in the training room and compared to see how accurate the results were. All teams managed to accurately record the waypoints for the five objects. Teambuilding, trust and skill transfers occurred during this GPS training.

**Final survey**

Five survey teams consisting only of Timorese researchers from UNTL and MAF were sent to each of the five subdistricts of Ermera. Each team was required to have at least one person that originally had come from that subdistrict to act as a liaison for that team to speak to local extension officers and sub-district authorities. It was also important so they could potentially act as a translator in some areas if only the local dialect was spoken or to help organise local guides and translators as was required.

The following points were also decided:

- Where possible the household mother was asked questions as head of the household⁵

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⁵ In Timor-Leste women are viewed as better ‘money managers’ (Niner, 2015) therefore it was decided to survey the household mother as the ‘household head’.
• A practical decision had to be made on whether to break up the question and answer survey sheets due to the weight of paper. It was decided instead to restructure the survey so the questions and answers were together to minimise errors.

• The use of 10 stones were used to represent percentage breakdowns for some questions to help explain and represent the concept.

In the field

Before any surveys began a meeting was held, including some of the team leaders, at Gleno (the district capital) in Ermera to meet with the District Administrator to inform him of the main objectives of the study. Individual teams met the subdistrict administrator and police officers to inform the local authorities about the goals and objectives of the survey, before the survey was conducted. The District Administrator responded favourably to the surveys being conducted and was eager to assist with the process if it was needed:

“Just leaving Gleno after meeting the District Administrator, I was nervous how he would respond to us conducting the survey as even though he had been informed prior I did wonder if he had received the information. He was very interested in the work and asked if there was anything he could do to help” (from research journal, 2011).

Each team leader had a notebook to record additional field notes, survey progress and organise expenses. They were required to record the Sub-district, Aldeia and Suco where surveys were conducted and how many surveys were completed at each location. The team leader had to sign off that these numbers were correct. The team leader was also required to check completed surveys and sign off that they were acceptable before filing them for analysis. Local guides were used when required to access isolated villages and make contact with appropriate village leaders to explain the survey. In the front of the notebook was also the list of villages that needed to be surveyed and the number of surveys required from each location. Within one month all surveys had been completed and collected for data analysis.

6 This was due to percentages being a foreign concept that would not be understood by all respondents so by using stones to represent amounts the households were more easily able to indicate allocations.
5.3.3 Observations on the process and outcomes of the survey training and initial results (Phase 3, PARC 3)

This section explores the third phase for PARC 3 (Figure 31). Observations on the process and the outcomes of the survey training for Household Survey Round 1 are discussed. Initial results from Household Survey Round 1 are also explored.

![Figure 31: PARC Finder – observation phase of PARC 3, observations on the outcomes of meetings and training to develop the Timor-Leste Coffee and Poverty Project](image)

**Training and survey implementation**

All participants in the training identified in a post-training survey that they spoke Tetum and Bahasa Indonesia, 33% spoke Portuguese and only 28% (which was 5/18) identified that they spoke English. GPS was a new skill for most participants as only 44% had used one previously. Fifty-six percent had previous experience in conducting survey research and 39% had experience with research specifically in agriculture or coffee. Only one participant had used mind mapping before. All participants responded positively to the questions about their experience with the survey training as shown in Table 9.

**Table 9: Participants response regarding survey training experience**

<table>
<thead>
<tr>
<th>In your experience is the following true?</th>
<th>Score out of 5 (1 = strongly disagree, 5 = strongly agree)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The training was well organised</td>
<td>4.8</td>
</tr>
<tr>
<td>The training was relevant to my needs</td>
<td>4.9</td>
</tr>
<tr>
<td>The training made a significant contribution to my learning</td>
<td>4.8</td>
</tr>
<tr>
<td>I will use the skills learnt in this training in my job</td>
<td>4.8</td>
</tr>
<tr>
<td>Overall, I am satisfied with the training</td>
<td>4.9</td>
</tr>
</tbody>
</table>

All participants responded ‘yes’ to the question ‘would you like more training’. They were allowed multiple responses to the question of what would they like more training in from a list with the option to also include other areas, and the most popular response was GPS.
training (67%), followed by research methodology (56%) and then mind mapping (44%). The best aspects of the training were identified in an open ended question as the mind mapping exercise for exploring ideas and the practical experience with the GPS units. Some ideas to improve the training included spending more time on understanding individual questions and practice on completing the survey, and more time practicing with the GPS units.

**Initial results**

From across 16 Sucos in the Ermera district, 601 surveys were analysed from Household Survey Round 1 (Table 10).

<table>
<thead>
<tr>
<th>Suco</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ailelo</td>
<td>58</td>
<td>9.7</td>
</tr>
<tr>
<td>Baboe Leten</td>
<td>47</td>
<td>7.8</td>
</tr>
<tr>
<td>Era Ulu</td>
<td>41</td>
<td>6.8</td>
</tr>
<tr>
<td>Fatu Bolu</td>
<td>51</td>
<td>8.5</td>
</tr>
<tr>
<td>Fatuquero</td>
<td>47</td>
<td>7.8</td>
</tr>
<tr>
<td>Hatologia Kota</td>
<td>55</td>
<td>9.2</td>
</tr>
<tr>
<td>Haupu</td>
<td>48</td>
<td>8.0</td>
</tr>
<tr>
<td>Humboe</td>
<td>21</td>
<td>3.5</td>
</tr>
<tr>
<td>Lihu</td>
<td>45</td>
<td>7.5</td>
</tr>
<tr>
<td>Malabe</td>
<td>3</td>
<td>0.5</td>
</tr>
<tr>
<td>Miritutu</td>
<td>25</td>
<td>4.2</td>
</tr>
<tr>
<td>Parmin</td>
<td>2</td>
<td>0.3</td>
</tr>
<tr>
<td>Poetete</td>
<td>47</td>
<td>7.8</td>
</tr>
<tr>
<td>Ponilala</td>
<td>40</td>
<td>6.7</td>
</tr>
<tr>
<td>Riheu</td>
<td>31</td>
<td>5.2</td>
</tr>
<tr>
<td>Samalete</td>
<td>40</td>
<td>6.7</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>601</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The mean number of household members was 6.68. The minimum number recorded was one household member, and the largest was recorded at 24 household members. Households that reported owning particular assets were as follows (if households owned more than one of a particular asset it was still counted as simply one);
1% owned a car
75% owned a motorbike
16.3% owned a television
35.1% owned a radio
50.2% owned a mobile phone
5% owned farm equipment

Households were asked what their main source of water was for their household. Water from a spring was the most common source at 39.8%, followed by the two other main sources of public taps/standpipes (30.8%) and private tap/connection to pipeline (20%) (Table 11).

Table 11: Main source of water for households

<table>
<thead>
<tr>
<th>Water Source</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring</td>
<td>239</td>
<td>39.8</td>
</tr>
<tr>
<td>Public taps/standpipe</td>
<td>185</td>
<td>30.8</td>
</tr>
<tr>
<td>Private tap/connection to pipeline</td>
<td>120</td>
<td>20</td>
</tr>
<tr>
<td>River, stream, lake or pond</td>
<td>38</td>
<td>6.3</td>
</tr>
<tr>
<td>Private well</td>
<td>11</td>
<td>1.8</td>
</tr>
<tr>
<td>Private pump</td>
<td>3</td>
<td>0.5</td>
</tr>
<tr>
<td>Public well</td>
<td>3</td>
<td>0.5</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Over a quarter (25.7%) of respondents said they consumed one meal per day (includes both small and large meals). Sixty-four percent of respondents had two or less meals per day. It is positive to note however that 21% were having three small meals per day and as a combined number, 34.4% of respondents reported having 3 meals per day (either small or large) since this survey was completed in the hungry season.

The mean annual income was reported at US$280.42. The median was US$200. The majority of households in this study sold their coffee as mainly parchment (54.6%) with 43.8% of households reporting selling their coffee as mainly cherry. Other households reported selling either a mix or bean. Households in this study predominantly sold their coffee to CCT (49.9%); 28.6% reported selling to other companies, 1% to middlemen and 17.8% listed other or did not respond. Households that predominantly sold cherry had a
median annual income of US$250. Households that predominantly sold parchment had a median annual income of US$150. Households that sold their coffee to the coffee cooperative, CCT, had a median annual income of US$250. Households that sold their coffee to other companies had a median annual income of US$100.

Initial analysis of the survey data in the GIS showed interesting results in relation to the role and contribution of CCT. From the buying distribution, it was evident that CCT covers a much larger buying area than the other companies in Timor-Leste and accesses areas that other companies may have difficulty accessing. GIS maps and additional initial results are presented in Appendix F.

5.3.4 Reflections on Participatory Action Research Cycle Three (Phase 4, PARC 3)

This section explores the fourth and final phase for PARC 3 (Figure 32). Feedback from the survey team is discussed and the role of the researcher is reflected upon. Reflections on participatory action research for empowerment are outlined and the next PARC is introduced.

Figure 32: PARC Finder – reflection phase of PARC 3, reflections on the outcomes of the meetings held with stakeholders to develop the Timor-Leste Coffee and Poverty Project

Feedback from survey team

Overall the Timorese survey team believed that Household Survey Round 1 was a success. Teams were successful in completing surveys in the designated Aldeias, however it had proven necessary to hire a local guide from each Aldeia to explain the purpose of the survey to the village leaders and locate the areas and households to be surveyed. There were very difficult conditions that the survey teams were working under. There was intense rainfall during the survey period which made the already difficult roads more dangerous and accessing households was also difficult with some teams reporting that the access paths were not visible.

At times the surveys could not continue due to rain and with access via the roads being in such poor condition. Sundays were for Church however some groups completed surveys in
the afternoons after attending Church. On some of the survey days, team members could only complete a couple of surveys as they had to walk a number of kilometres to the household. Also, in a number of areas local interpreters were needed as well, as the households did not speak Tetum where it is a minority language in some parts of the country (Taylor-Leech, 2009).

Additional problems were also the difficulty of accessing money in the field as some of the already scarce ATMs were not working and flat tyres were common from the road condition. Survey teams also found that there were still some issues with the translations once they were in the field. Even though the translations had not been rushed it appeared that the time it would take to achieve accurate translations had still been underestimated. Also by getting the same person to translate from English to Tetum and back again, even with assistance, who already had an understanding of the meaning behind the survey questions contributed to some of the misunderstanding of question meanings once in the field. There are problems with both direct translation methods (a person fluent in both languages translates) and back translation (a method that starts with direct translation and then includes a different person to translate the new version of the survey back into the source language) (Potaka & Cochrane, 2004) with the translators own beliefs and social and cultural context influencing the translation (Temple & Edwards, 2002).

The challenges and complexities of language in Timor-Leste make research difficult in this multilingual society. This resulted in survey answers being recorded in Tetum, Bahasa Indonesia, Portuguese and English (as well as a few other languages sometimes). This made translation back into English difficult even though there were not many open ended questions. Care was taken to understand and interpret recorded answers by comparing with other answers in the same survey and between surveys, and through general discussion. If an answer was not understood it was changed to ‘missing data’, to maintain the survey’s validity.

It appeared that the survey training was successful, however improvements could be further made with translations and individual survey question understanding. It had initially been decided at the start of the training for Household Survey Round 1 that only one day would be spent on the training for the second survey, however due to the feedback from the Timorese research team it was decided it would be worth conducting a two day training session to ensure adequate time for discussion.
Reflection on the role of the researcher

When compared to the pilot survey conducted in PARC 1, Household Survey Round 1 for the Timor-Leste Coffee and Poverty Project had improvements in the structure and understanding of questions. The method used for sampling households within Ermera was also successful as it reached a large range of households, however had enough flexibility to make it viable in the field. For example once in the previously selected Suco, the survey team under the supervision of the team leader would conduct random sampling of households, however if no one was home during the time allocated or the household was inaccessible the next immediate household in distance would be chosen to replace it.

During the training it became apparent to never underestimate the power of fun and humour. This set a positive scene for the Timorese survey team to conduct the surveys in the field under quite challenging conditions. Each team leader debriefed their own team as the Australian team was not able to facilitate this before leaving the country, so a formal debrief of the survey team as a whole was planned for the next research trip as well as at the start of the training for Household Survey Round 2.

While to someone such as myself, from a monolingual background, the multiple use of different languages may seem confusing however, in a multilingual country, such as Timor-Leste, it makes sense. It does however, present a unique set of problems in Timor-Leste due to the evolution of how the languages have come to Timor-Leste and been used (Taylor-Leech, 2009).

The participation in a short Tetum language course discussed in PARC 2 allowed for the development of language skills to introduce myself and conduct basic conversations in Tetum which seemed to be appreciated by the team. It also provided a chance to add humour to the training and
demonstrate that it is OK to make mistakes with language; just have a go and then get the translator to help if needed. Another important social aspect to the training was the sharing of food (Westby & Hwa-Froelich, 2003). This provided an informal atmosphere to get to know and build trust with the research team, and to form relationships on an individual level. Therefore it was important to try and remember as many details about each person to keep building relationships and networks in the project in order to foster strong collaborative relationships which will provide positive outcomes for the project as well as for the participants of the project. In practice mnemonic devices were used in order to acquire and recall details about individuals as it is an effective memory technique (Odigwe & Davidson, 2005).

**Reflection on participatory action research for empowerment**

The problem task for participatory action research cycle three was to focus on continuing to build on the collaborative approach of the Timor-Leste Coffee and Poverty Project and determine ‘how to conduct training and survey implementation in a collaborative community based project.’ This was addressed by including the Timorese research team members in decision-making and process design in as many steps as possible. Roles were clearly defined during group discussions for what skills and knowledge different team members brought to the project so that the participation from different team members and groups could be valued and appropriately utilised and resources not wasted during the project. The participatory action research approach allowed the training, while structured, to be flexible based on the team needs and feedback received during the process. It also allowed changes to the survey and logistics to become a collaborative process. Humour and practical tasks such as role plays and GPS waypoint activities continued to build capacity as well as team building. Through the GPS training conducted in participatory action research cycle two the opportunity to share skills was presented and participants were eager to teach these skills to those who did not have experience in GPS. The foundation and trust built in the previous participatory action research cycle greatly assisted the collaborative efforts in participatory action research cycle three.
Members from the Timorese research team did contribute to discussions during the training, however many were hesitant to offer opinions, especially without the project champion translating. Graphic communication in the form of mind maps helped to overcome these hesitations. The translator was an empowering element in the training process. While the challenges of adequate time and flexibility were built more strongly into this survey training compared to the pilot study there was still the need to address this further in the training for Household Survey Round 2. Without adequate time to discuss all necessary aspects the process becomes disempowering and participants can get stressed. Not all household surveys were handed back to the Australian research team during this participatory action research cycle which was discovered once back in Australia, and it was not known by the team leaders at this point where they were located, and not all completed household surveys were completed accurately. This started to undermine confidence that was being built within the Timorese research team so became a focus in the next participatory action research cycle. Empowerment themes that have arisen from participatory action research cycle three at an individual, organisational and community level are outlined in Figure 33.

Figure 33: Empowerment themes and PAR tools at an individual, organisational and community level from PARC 3
5.3.5 Evolution in participatory action research methodology

The task to complete the training and implementation of Household Survey Round 1 for the Timor-Leste Coffee and Poverty Project was explored in this participatory action research cycle. The training was a success in many ways including the accuracy and understanding that was demonstrated by each research team member before conducting the surveys and through the feedback that was received after the training. There were 601 household surveys completed throughout the district of Ermera. Preliminary results however indicated that many surveys were still not completed correctly so a discussion about why this happened became part of the next step in this research project. Having basic Tetum language conversational skills improved the relationship and earned respect in this setting. The next PARC focuses on planning and conducting Household Survey Round 2 and the evolution of the relationships being built and the challenges present throughout this participatory approach to research (Figure 34).

![Figure 34: Evolution in participatory action research cycles to PARC 4](image-url)
5.4 Participatory Action Research Cycle Four: Post-coffee harvest research cycle

In Participatory Action Research Cycle Three (PARC 3), Household Survey Round 1 was completed. Training for this household survey was conducted to provide opportunities for capacity building and empowerment, while also meeting the Timor-Leste Coffee and Poverty Project needs of increasing the effectiveness and accuracy of the household surveys. During the training it was learned that overall participants were very satisfied with the training format, however improvements could be implemented by spending more time on understanding individual questions and more practice on completing the survey, with more time allocated for practicing with the GPS devices. During the implementation of Household Survey Round 1, 601 household surveys were completed and preliminarily analysed. The main results from Household Survey Round 1 at this stage involved the basic demographics of the household, their assets, meals consumed and income. Due to some misinterpretations or apparent inaccurate results a list of lessons learned was created and brainstorming performed to improve the next survey implemented. This resulted in a number of changes made to Household Survey Round 2. These changes were an important part of the process. Identifying and acknowledging where improvements could be made rather than ignoring them, allowed for further growth of the Timorese survey team, the Australian research team and the Timor-Leste Coffee and Poverty Project as a whole.

Schindler & Eppler (2003) comment that a common problem with projects is that there is often an unwillingness to learn from mistakes.

Based on the lessons learned in the previous three participatory action research cycles, Participatory Action Research Cycle Four (PARC 4) focuses on the debriefing that took place about Household Survey Round 1 in Timor-Leste as part of the planning phase for the training and implementation of Household Survey Round 2 (Figure 35). The PARC 4 problem definition and cycle summary are outlined in Figure 36. Household Survey Round 2 was designed to re-survey the original participants and resulted in 778 completed surveys. The planning phase of this participatory action research cycle (PARC) focuses on the main lessons learned for training and survey implementation and how preliminary results of Household Survey Round 1 were discussed with the Timorese research team leaders in Timor-Leste. The action phase outlines how the training was conducted and how the surveys were implemented. The observation phase outlines challenges of conducting research in Timor-Leste and finally reflection is addressed by discussing why the reporting
back of results to stakeholders and the community is an important step in this participatory action research (PAR) study, as well as including a personal reflection on this PARC. This PARC will conclude by introducing the next stage of the research which has been shaped from this fourth participatory action research cycle.

Figure 35: Evolution in participatory action research cycles, now at PARC 4

**Problem Definition:**

*Collaboration for Household Survey Round 2 debriefing, training and implementation for the Timor-Leste Coffee and Poverty Project after the coffee harvest season*

- **PLAN**
  - Survey debrief
  - Challenges of survey
  - Information from ATT

- **ACT**
  - Household Survey Round 2 training
  - Conducting survey

- **OBSERVE**
  - Challenges in more detail
  - Initial results

- **REFLECT**
  - Role of researcher
  - Opportunities for empowerment

Figure 36: Participatory Action Research Cycle Four (PARC 4) problem definition and cycle summary
5.4.1 Household Survey Round 1 Debrief (Phase 1, PARC 4)

This section covers the planning phase for Household Survey Round 2 which forms Phase 1 of PARC 4 (Figure 37). The debriefing as part of the plan for Household Survey Round 2 is discussed and the new problem of ‘how to utilise skills and resources effectively in a collaborative community based project’ is introduced. The communities involved in PARC 4 are outlined in Table 12.

![Figure 37: PARC Finder – planning phase of PARC 4 household Survey Round 2 for the Timor-Leste Coffee and Poverty Project](image)

### Table 12: Communities involved in Participatory Action Research Cycle Four

<table>
<thead>
<tr>
<th>COMMUNITY</th>
<th>Role and/or responsibilities in project</th>
<th>Power dynamic and/or needs</th>
<th>Tools used/empowerment gained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australian Research Team</td>
<td>• Conducted debriefing and survey training</td>
<td>• In charge of training</td>
<td>• Use graphic communication, translator, context specific examples, collaborative approach</td>
</tr>
<tr>
<td>ATT</td>
<td>• Discussed household survey</td>
<td>• To develop own household survey</td>
<td>• Through collaboration gained knowledge</td>
</tr>
<tr>
<td>ETDA</td>
<td>• Needed experience facilitating groups</td>
<td>• Gained experience and a reference for how well it was organised, glad we came back</td>
<td>• Provided training facility</td>
</tr>
<tr>
<td>MAF</td>
<td>• Collaborate on final survey design, training and survey implementation</td>
<td>• Followed UNTL lead as they were the academics</td>
<td>• Experience working with UNTL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Provided support and on the ground experience</td>
<td>• Survey training and experience</td>
</tr>
<tr>
<td>UNTL</td>
<td>• Participate in Household Survey Round 1 debriefing, Collaborate on final survey design, training and survey implementation, Survey team leaders</td>
<td>• Provided translator, Were team leaders, Understood academic integrity of survey, Conducted surveys</td>
<td>• Experience working with MAF, Survey training and experience</td>
</tr>
</tbody>
</table>
Awareness building

An important part of any research project, but especially a cross-cultural collaborative project is the process of debriefing. Debriefing is an important part of project management which allows for key learning from the project experience (Schindler & Eppler, 2003). Therefore a research trip was organised from 29th of June 2011 to the 8th of July 2011 to meet with the Timorese research team to discuss the research progress thus far and refine the methods for the next stage of the household surveys. To plan for this research trip, initial results of Household Survey Round 1 were analysed to look for problematic questions that may need to be asked again and to help design and finalise Household Survey Round 2. Part of this also involved looking at the household surveys in GIS to determine if this part of the project provided information that would yield accurate data since reliable social, economic and natural resource base data is essential for sustainable development to occur in Timor-Leste. However due to issues with the GIS database mentioned previously in PARC 2 it was decided that completing an accurate GIS analysis was outside the scope of this thesis.

Based on the work and lessons learned from the previous participatory action research cycles, Household Survey Round 2 for the Timor-Leste Coffee and Poverty Project was developed. The Australian research team took the lead on this development, however through email with the project ‘champion’ the draft was constructed with input from the Timorese research team, team leaders as well. This survey focused less on gathering information on household characteristics as this information was gathered previously during Household Survey Round 1. Instead it was structured to ask questions about consumption within the last four weeks which corresponded to the consumption questions in Household Survey Round 1. A question that was modified based on feedback during the debriefing session was question 1.5 which asked ‘What was the average price of rice?’ In the first survey it was just asked to state the price of rice in US$ per kg. However, this created difficulty in the field for getting accurate results as it is not purchased by the kilogram in the districts, rather it is purchased by the sack or by the cup. Therefore these options were modified for this round of surveys.

The income section of Household Survey Round 2 was very specific to the coffee harvest that had just taken place and also coffee growing activities. Based on the meetings that had been previously held with CCT it appeared there could be a disconnection between what CCT thought growers were doing compared to what they were actually doing. Therefore
the following three questions were added; ‘Are you a member of CCT’, ‘What changes would you like to see with how CCT operates?’ and ‘Have you heard of Fairtrade?’

A question that was added due to conversations the Timorese research team had with growers during the first round of surveys was ‘What language(s) were used with your buyers’ as some growers had indicated that they had trouble communicating with buyers. A question about holding celebrations after the coffee harvest was also added as conversations on how important and commonplace these celebrations were had been discussed by a variety of different people in Timor-Leste, yet it was difficult to find accurate information on how prevalent these celebrations actually were. Household Survey Round 2 also had a much more detailed section on savings, loans and consumption smoothing to try and understand how money was being managed by these households.

**Problem Definition**

Throughout the **Timor-Leste Coffee and Poverty Project**, skills and resources were being identified that contributed to the study and also provided chances for enhancing capacity and opportunities for empowerment. These skills and resources came from a multitude of areas and a strong focus on how to best utilise these is important to consider when looking for opportunities to build an empowering project. Therefore the problem to address at this stage of the project was ‘how to utilise skills and resources effectively in a collaborative community based project.’

To address this problem, challenges needed to be addressed that were from the debriefing with UNTL Timorese research team leaders. The use of GIS and the challenges that had been identified also needed to be addressed. It was also decided to seek information from another cooperative, Alter Trade Timor (ATT) to compare the challenges and opportunities they were identifying in the coffee producing sector.

The training for Household Survey Round 2 was again planned to be conducted at ETDA. It was decided that two days of training would be conducted as most of the contextual and method material had been discussed during the training for Household Survey Round 1. This information would be addressed again briefly, however a greater focus would be on addressing and understanding each individual survey question and making sure that the translations were not ambiguous and could be understood by every member of the Timorese research team.
5.4.2 Action phase of meetings, survey training and implementation (Phase 2, PARC 4)

This section explores the second phase of action for PARC 4 (Figure 38). The development from Household Survey Round 1 is discussed as is the training for Household Survey Round 2. The collaboration with a local coffee cooperative, Alter Trade Timor (ATT) to assist in survey design is also discussed.

To ensure that the most accurate data collection was occurring during the **Timor-Leste Coffee and Poverty Project** it was crucial to conduct debriefing sessions with the team leaders from Household Survey Round 1. Firstly a meeting was held with the “champion,” and then the other team leaders joined the debriefing. Meetings were also held with the cooperative ATT to discuss household survey methods.

**Debriefing with UNTL team leaders**

Before the debriefing of Household Survey Round 1 could begin, basic logistics were discussed with the project ‘champion’. The most important matter being that some surveys from the first round had still not been received. Even though communication pathways had remained open after Household Survey Round 1 was completed, it was not until the Australian research team was back in Timor-Leste that the issue of the missing surveys could be addressed properly. After bringing up this issue it was less than an hour later that the missing surveys were found in an office. The task of scanning these surveys so that data entry could continue was conducted immediately and the importance of returning the completed surveys as soon as they were completed in the field was stressed. The main issue that had caused this problem was that some Sucos were so difficult to reach (therefore requiring extra time to complete) during the first round of surveys that not all surveys could be handed in to the Australian Survey Team before they departed. Once the survey team returned to Dili the system that had been put in place no longer worked. In order to assist the process of data collection, the Australian team had been scanning the surveys and knew where to complete this task – without the Australian team present and
the chain of communication in place the surveys had been stored and no further action taken.

“Such a simple mistake on our part but it caused so much confusion. We had taken over part of the chain of actions and not informed the whole team of the process, we would have been better off working out during the training who would be responsible for the scanning and sending of surveys rather than taking it upon ourselves to do it” (from research journal, 2011).

The draft of Household Survey Round 2 was discussed in terms of some of the outcomes of Household Survey Round 1.

“It was a great success, we worked hard, everyone worked hard and now we see these results which will help us and our country” (Timorese research team participant, personal communication).

This was a very informal discussion to begin with and it was decided to meet again in the next few days once the team leaders had a chance to look at the survey more closely and in detail, paying particular attention to the wording of questions so as to minimise confusion once in the field.

“...some of them, the inexperienced ones do not try to understand all the questions, it is important that this time they do, we need to get the good data” (Timorese research team participant).

The issue of attrition was also discussed as longitudinal household surveys often experience this (Alderman, Behrman, Kohler, Maluccio, & Watkins, 2001). The timing of Household Survey Round 2 was also very important as it was important to capture data at the completion of the coffee harvest, however there was also the cultural consideration that the people in Ermera party after the coffee season. Palmer & de Carvalho (2008) refer to the celebrations after the mechi (‘sea worms’) harvest in Timor-Leste where community wide events are held of singing, dancing and feasting. This is similar to what occurs in the coffee growing districts after the harvest so the survey would have to be completed before this started so they would be available to interview.

When the second meeting was held at UNTL with the team leaders specific questions on the survey were discussed. Some answers in Household Survey Round 1 had been
ambiguous whether the answer recorded was no or missing data when left blank. Through the debriefing it was discovered that they had advised their team members that if the answer was no they could leave this blank. It was explained that as the data entry from the surveys was not being conducted by the same researchers in the field that consistency was extremely important. Therefore this point needed to be highlighted again in the next training session. Also attention to detail needed to be stressed again as the individual information section of the surveys overall had a lot of missing information.

“We must check, each survey must be checked by the leader and not signed off if it is missing data, we are responsible and look bad when they come back incomplete”

(Timorese research team participant, July 1, 2011).

During this meeting response categories were refined and question meanings discussed so that a relevant training program could be constructed for Household Survey Round 2. Approximately 80% of this survey had been translated at this point.

*Household Survey Round 1 debriefing with Timorese research team*

Debriefing for the whole Timorese research team was conducted at the start of the training session for Household Survey Round 2. It was important to debrief the whole group. Debriefing is important as it allows for identification of gaps in skills and knowledge (Raemer et al., 2011). A similar structure to the first training session was followed with introductions at the very start again to ease into the discussions. It was then very important to thank and acknowledge all the hard work the team had done during Household Survey Round 1 and seek feedback from individuals, groups and the team as a whole.

The feedback was an informal discussion based around three prompts to help the participants think about what they would like to add to the conversation, *What did you learn?* *What difficulties did you encounter?* and *Did anything funny or embarrassing happen?* The start of the feedback was surprising in that many teams reported that some households felt envious that they were not interviewed. They also wanted to know if those that were interviewed received money. The teams handled these questions well and explained that while they would like to interview everyone they cannot, however many of the Timorese research team still took the time to listen to the stories of these households as they just wanted to be heard. Whether they were interviewed or not, many of the informal conversations were complaining about the government not helping to improve their situation.
The teams also learned that turning the survey into a story or conversation worked better than simply reading straight off the survey sheets with this more informal approach also accompanied by a drink of coffee at almost every house as happens in Timor-Leste.

“I was so tired, the rain and the walking and slipping through the mud! But I could not sleep! Too much coffee! But we keep doing this at every house because of respect, you cannot disrespect Tia, disrespect Tiu when they are giving their time to us” (Timorese research team participant, July 3, 2011).

They reported that even though they were tired by the end of the day they could not sleep because of all the caffeine. The mix in the teams of having experienced surveyors and inexperienced allowed capacity building to occur and they reported that they tried to make it fun for each of the teams. Some of the main challenges were flat tyres and the general poor conditions of the roads, the use of local guides so needing to coordinate with them which was sometimes difficult and making sure that all answers were being completed. Another challenge was obtaining truthful answers from the respondents. Corstange (2009) discusses the difficulties of obtaining truthful answers in surveys to sensitive questions. Some teams reported that it appeared some households did not report all the animals they owned, that they wanted to hide what they had. One team leader specifically reported that the household were asked if they had cows, they reported no and then shortly after the same household was seen herding cows.

One team leader reported that they had been contacted by the Australian part of the team when checking surveys to ask about missing answers for questions and that this was embarrassing. Therefore for this round of surveys they wanted to make sure each team leader was carefully managing their team and making sure the quality of the data collection was of a higher standard this time.

*Household Survey Round 2*

A new challenge that presented itself for this round of surveys was the presence of the political elections. Those team members who were from Ermera district reported to the group that the political situation was getting tense and that some areas may be too dangerous to go back to. Therefore it was stressed to the group that their safety was the priority and that they should not enter potentially dangerous areas, so they were to keep in contact with the heads of Sucos and monitor the situation carefully. Brooks et al. (2011), discuss the periods of community violence and instability that typify post-conflict
countries which is the case in Timor-Leste as exemplified by the political violence that occurred in 2006. The concept of attrition was again explained to the group and that it was to be expected, especially in such a large survey. Due to the likelihood of many households partaking in lots of community time and traditional ceremonies it was decided that a different member of the household could answer the second survey if attempts to contact the original member failed. To confirm households GPS points were to be taken again and the name matched to the first round of household surveys.

It was interesting to note that the training this time was quite different to the first. The participants felt a lot more comfortable and it appeared that capacity had grown as they asked many questions to clarify and had a lot of feedback on the questions. For example, an original question was worded as ‘Did your household hold a celebration for the finish of the harvest?’ however after discussions with the group it was changed to ‘Did your household hold/were they involved in a celebration for the finish of the harvest?’ to reflect that people gather together for these celebrations, they are not held in isolation. The final version of the English version of Household Survey Round 2 is available in Appendix G.

Due to the added complexity of re-surveying the same households, cover sheets were given to each team leader of each sub-district to be surveyed. The information on the sheet included sub-district name, all members of the team, the number of surveys that needed to be completed in each Suco and the survey ID# that corresponded to that area. A refresher training exercise on how to use the GPS units was also conducted to make sure all team members remembered how to operate them and to allow time to practice with the devices.

Meeting with Alter Trade Timor

A meeting was also organised with the co-operative Alter Trade Timor (ATT) during this research trip. ATT started forming in 2006 and was officially operational in 2008; it has a goal to promote diversification rather than have the monoculture of coffee in Ermera and to connect people to trade opportunities. They mainly buy coffee in Ermera from 10 small cooperatives, however they also buy coffee from Maubara, Bobonaro, Ainaro, Maubisse and Aileu. In 2011 ATT was still a relatively new cooperative that was growing and learning. Especially in the beginning the coffee quality and quantity was difficult to control. They had seen poor practices being used by the coffee growers such as ripping branches off trees along the roadsides rather than carefully picking the coffee cherries so placed a large emphasis on raising the capacity of the coffee growers by working closely
with them. Part of this relationship is realising that change takes time so rather than only collecting export quality coffee, they also sell in the domestic market if the coffee does not meet the export standards.

In the beginning a main focus was on stabilising the quality of the coffee cherry. To address this issue first they had to process the coffee themselves in their factory in Dili. One major issue was that instead of receiving red ripe coffee cherries, in the beginning it was 40% green and 60% red. They ended up with 30 tonnes of parchment that was all rejected as the growers did not get the fermentation process correct and none of it could be exported to the Japanese market for which it was originally intended.

Then in 2010 information was distributed to farmers on the proper practices to collect, pulp, wash and ferment. The process to disseminate the information is through demonstrations and constant monitoring. It was mentioned by ATT (personal communication, July 6, 2011) that the monitoring was the most crucial aspect and they had to go back to the communities a lot to reinforce the training.

“Yes it is time consuming but it is something that can’t be rushed. The projects have to come from the community, it is the only way it will be successful. We keep going back and build on the relationships, they get stronger and we see the training starting to work, it takes time but that is OK.”

As of 2011 there were about 315 growers that were working with ATT. These growers were receiving training, access to credit, access to reportedly the highest paid price for coffee in Ermera and participation in social programs. At this stage they were not interested in obtaining certifications as they wanted to focus on their own strategies for creating fairer trade and conditions for the coffee growers. A primary goal at this stage of the cooperative was to diversify into vegetables and animals and expand their social programs. Rice distribution was a main focus at this time, whereby ATT bought rice from Dili and sold it for a fair price up in the districts as it was reported that inflated rice prices was a major problem for many households. An aspect of developing the social programs was the construction of a household survey of the ATT members. They were very
interested in receiving assistance in developing this household survey due to the experience the *Timor-Leste Coffee and Poverty Project* had gathered.\footnote{A household survey was developed in collaboration with ATT however it was implemented after the Timor-Leste Coffee and Poverty Project had finished in Timor-Leste. Informal collaborations did however continue.}

### 5.4.3 Observations on the process of research (Phase 3, PARC 4).

This section explores the third phase for PARC 4 (Figure 39). Observations on the challenges of conducting research in Timor-Leste are briefly outlined based on experiences thus far. Specifically language and access challenges are discussed.

![PLAN ACT OBSERVE REFLECT](image)

*Figure 39: PARC Finder – observation phase of PARC 4, observations on the outcomes of Household Survey Round 2 for the Timor-Leste Coffee and Poverty Project*

### Research challenges in Timor-Leste

Any research project faces numerous challenges, however research in Timor-Leste faces a unique blend of challenges. One of the main challenges was for the researcher to communicate effectively with participants at all levels. The surveys and formal written information sheets for district and Suco heads were primarily translated into Tetum (the most widely spoken local language in Timor-Leste) with elements of Portuguese, Bahasa Indonesia and English where the translator deemed appropriate to convey the correct meaning. Many countries are multilingual, however Timor-Leste is a country that has a multitude of language challenges. The two national languages of Tetum and the previous colonial language of Portuguese are both the official languages of the country with Indonesian and English the working languages. While Portuguese is spoken by 36% of the population according to the 2006 census data it is spoken by older citizens and those highly educated particularly in the subject area of law (Taylor-Leech, 2009). Indonesian is widely spoken due to the duration of the Indonesian occupation and the continued presence of Indonesia due to trade, proximity and media, yet its use is complicated because of the now independent nature of Timor-Leste that came at a high price. There are many citizens who only speak their own local dialect, adding to the difficulties of researching in Timor-
Therefore the issues in language encountered during the research project were complicated. Translations were difficult to agree on and in the field a local translator was sometimes needed for the particular local dialect. Researchers often rely on members of the in-country team to translate for them but since they are not trained interpreters will input their own bias into the information so that it is difficult to determine what actually was said. For research to be valid and trustworthy it is important to correctly obtain what the participant is actually saying which is incredibly difficult in a cross-cultural setting with the use of the interpreter adding to the difficulty (Shimpuku & Norr, 2012).

To expand on the issue of informed consent that was touched on in Chapter Four in cross-cultural research, obtaining a signed consent form can be a challenging task, even problematic (particularly in a country like Timor-Leste where there is a high rate of illiteracy) with only around 52% of the rural population literate (Palms Australia, 2016). Liamputtong (2008) states that this is a moral and ethical issue in cross-cultural research and made the following suggestions in relation to obtaining consent. As some cultural and ethnic groups in Timor-Leste may be illiterate (even in their own language), or may find written consent to be intimidating. Under these circumstances, it is sensible and appropriate to read aloud the details of the consent form and to then obtain a verbal consent from the participants (Liamputtong, 2008). This is how consent was obtained for the Timor-Leste Coffee and Poverty Project.

Gaining access to the coffee producing households was also extremely difficult. Even the team leaders who were in theory used to the roads of Timor-Leste were uncomfortable driving outside of Dili into the districts so drivers had to be hired. Then access to the Sucos was often possible only on foot. As Household Survey Round 1 was conducted in the wet season this added to the access complications with heavy rainfall occurring. Once households had been located however from undertaking Household Survey Round 1 and Household Survey Round 2 being planned for the dry season, access was not as prevalent an issue, yet still presented challenges of remote areas only accessible on foot, badly maintained road networks and areas that required a local guide to access.

Power outages are a common occurrence in Timor-Leste. As previously mentioned these interrupted training sessions making it difficult to rely on a pre-determined agenda. Rather than focusing only on the difficulty this presented, it also provided opportunities for the
group to collaborate to problem solve solutions to this issue. This also gave the Australian research team greater insight into the difficulties of working and living in Timor-Leste.

5.4.4 Reflections on Participatory Action Research Cycle Four (Phase 4, PARC 4)
This section explores the fourth and final phase for PARC 4 (Figure 40). Reflections on overcoming research challenges and the importance of training and reporting are discussed. Reflections on PAR for empowerment are outlined and the final PARC is introduced.

![PLAN ACT OBSERVE REFLECT]

Figure 40: PARC Finder – reflection phase of PARC 4, reflections on the importance of training and reporting

Survey process
During the survey training and the debriefing process it appeared that the surveyor’s attitude was very important to obtaining the household data. A relationship had to be established with the households and trust built between the surveyor and respondent so that they would feel comfortable and confident with completing the survey. Therefore it was crucial that the training prepared the surveyors for questions that may be asked of them and to know how the data would be used so that this information could be accurately disseminated to households.

With the political climate of Timor-Leste where tensions remain unresolved (Arnold cited in DWCP, 2015), it was also important to reinforce that the surveyors remain impartial and focus on the survey questions, not enter into political discussions. It was also very important to make sure that each team again went through the correct channels to survey the households. Each team needed to approach the head of the Suco first, then be sent to the head of the Aldeia and then use local guides as necessary to reach the households.

The plan for the survey data was for it to be compiled into a report and then this report would be used to guide another debriefing session for those in the research team who were interested plus organisations in Dili and the community in Ermera in July 2013. Reporting back to the communities that were surveyed was an important element of this participatory
action research study. By taking information back to the field and to community leaders
they can use the information and ask questions to empower themselves to create their own
change.

*Addressing and overcoming research challenges*
Conducting research in Timor-Leste is a difficult task. While researching these issues
before embarking on a research project helps, it cannot truly prepare a researcher for the
reality in the field. While not all challenges can be avoided, approaching research through
the action research approach allows for more effective practices to take place. It also
relates to the challenges expressed in post-development theory that practices need to be
empowering so effective capacity building is crucial to the success of the project and to the
successful conducting of ethical, effective research. A small example was evident with the
scanning of the surveys from Household Survey Round 1. If this task had been allocated to
the Timorese research team then the late surveys would most likely have been scanned and
sent to the Australian research team much sooner and without having to follow it up. The
minor task of helping by scanning the surveys was not empowering, this focus must be on
all relevant stages no matter how trivial they appear.

*Reflection on the role of the researcher*
Up until this point in the research process I had felt that my inexperience
could negatively affect outcomes of this research project and any mistakes
or inadequacies that were present would be a reflection of this. However at a
conference conducted in Timor-Leste in June 2011, speaker after speaker
were discussing the challenges of conducting research in Timor-Leste. It was
astounding the number of researchers who had not conducted any community
engagement or found Timorese collaborators to work with. The value of the
engagement process that had unfolded during the *Timor-Leste Coffee and
Poverty Project* became much more apparent to myself and I saw the success
that the project was already experiencing through results as well as in
capacity building and empowerment.
I was also becoming much more aware of the importance of language use and consistency during the process. Seeing the challenges we were facing at each stage made me realise how difficult some of the simplest tasks were to complete in Timor-Leste for its citizens.

“There are so many challenges here, we face new ones everyday - language, road access, power outages. It is just part of the everyday and they keep going, keep pushing forward” (research journal).

Power turning off all the time, roads extremely difficult to access, the challenges of multiple languages - my respect just kept growing for all the work this nation and its people had achieved since independence and the reality that effective capacity building and collaborations with the international community was so important. However, it needed to be on Timor-Leste’s terms and in their best interest.

Reflection on participatory action research for empowerment

The problem task for participatory action research cycle four was to focus on continuing to build on the collaborative approach of the Timor-Leste Coffee and Poverty Project and determine ‘how to utilise skills and resources effectively in a collaborative community based project.’ This was addressed by observing how skills and resources were being used by the project to date. Using the available skills and resources of a community is a prominent theme in empowerment (Angeles, 2005) and the researcher needs to be mindful of looking for and providing opportunities for this to take place. The PAR approach allowed the Timorese research team to contribute to changes in the survey approach and training through the debriefing sessions with the team leaders initially and then the whole group.

ATT allowed for an opportunity to collaborate with another organisation that was trying to empower a community, in this case coffee grower households directly. This provided the researcher an opportunity to further empower this group by working with them to further develop their household survey. Unfortunately the collaboration in the scope of this thesis ended there as it took more time for them to implement the survey. However
empowerment is not always about seeing the results – the result was the process. Confidence was built with the Timorese research team who were much more verbal and forthcoming with ideas and suggestions during the Household Survey Round 2 training with the same Timorese research team being used for the initial survey as well as for Household Survey Round 2. The Aldeia community also had trust established and reinforced as they had the same researchers come back to do the follow up surveys as promised. Empowerment themes that have arisen from PARC 4 at an individual, organisational and community level are outlined in Figure 41.

![Empowerment themes and PAR tools at an individual, organisational and community level from PARC4](image)

5.4.5 Evolution in participatory action research methodology

The task to debrief and explore the challenges of conducting research in Timor-Leste was explored in this participatory action research cycle as well as the training and implementation of Household Survey Round 2 for the Timor-Leste Coffee and Poverty Project. By valuing and prioritising the debriefing between Household Survey Round 1 and Household Survey Round 2, a chance was provided to try and obtain accurate missing
data and to address problems before they occurred in Household Survey Round 2. The training was a success in many ways including confidence building and 778 household surveys being completed throughout the district of Ermera. Now having the data from both household surveys, comparisons could be made between the start of the coffee harvest season and after the coffee harvest season. The next participatory action research cycle focuses on the final research trip that was conducted to report back on the findings of the surveys to communities and organisations and receive feedback on these findings (Figure 42).

Figure 42: Evolution in participatory action research cycles to PARC 5
5.5 Participatory Action Research Cycle Five: Reporting to community cycle

In Participatory Action Research Cycle Four (PARC 4), the debriefing for Household Survey Round 1 occurred. Due to some misinterpretations or apparent inaccurate results, brainstorming with the team was performed to improve the next survey. This resulted in a number of changes made to Household Survey Round 2. These changes were an important part of the process. Identifying and acknowledging where improvements could be made rather than ignoring them allowed for further growth of the Timorese survey team, the Australian research team and the Timor-Leste Coffee and Poverty Project as a whole.

The training and implementation of Household Survey Round 2 also occurred. In Participatory Action Research Cycle Five (PARC 5) (Figure 43), how the results of the two rounds of household surveys were reported back to the community is discussed. The challenges of interpreting and reporting research in Timor-Leste are considered and a discussion on achieving research outcomes that are mutually beneficial to all involved is presented. The PARC 5 problem definition and cycle summary are outlined in Figure 44.

The planning phase of this action cycle provides the background to this research trip and the formation of the Coffee, Poverty & Economic Development in Timor-Leste: Research Report 2013 (Appendix H). The action phase outlines how the results were reported back at the stakeholder and community meetings. The observation phase addresses how the results were received in the meetings and in the cultural context. Results from the Timor-Leste household surveys that were reported back to the community will be reflected upon in terms of credible, cultural and reporting considerations.

Figure 43: Evolution in participatory action research cycles, now at PARC 5
5.5.1 Planning phase for reporting back to agricultural communities (Phase 1, PARC 5)

This section covers the planning phase for reporting back household survey results to agricultural communities in Timor-Leste (Figure 45). The report created based on these results is introduced and the new problem of ‘how to report study results back to agricultural communities in Timor-Leste’ is discussed. The communities involved in PARC 5 are outlined in Table 13.
Table 13: Communities involved in Participatory Action Research Cycle Five

<table>
<thead>
<tr>
<th>COMMUNITY</th>
<th>Role and/or responsibilities in project</th>
<th>Power dynamic and/or needs</th>
<th>Tools used/empowerment gained</th>
</tr>
</thead>
</table>
| Aldeias         | • Aldeia heads attend community meeting in Gleno | • Accessible information on coffee in Aldeia, access to information on case studies | • Translated version of results, translated presentation and slides  
• Briefing showed deference to Aldeia’s power structure  
• Results gave Aldeia’s members power to negotiate with coffee buyers and other international agencies as equals |
| Australian Research Team | • Analysed results, constructed the [Coffee, Poverty & Economic Development in Timor-Leste: Research Report 2013](#) | • To meet funding requirements  
• Had control of reporting back results | • Collaborated with Timorese research team to report results to community |
| CCT             | • Participated in reporting back workshop in Dili | • More information on their growers | • Additional information on their growers |
| ETCI            | • Venue and facilitate reporting back to community in Gleno, Ermera | • See completion of project and results | • Being part of project start and end, a translated copy of results |
| MAF             | • Participate in workshop in Dili | • Information, stronger link with UNTL | • Information, stronger link with UNTL |
| UNTL            | • Translator, presenter of results | • Research presence | • Exposure as researchers, final report, skills |

### Awareness building

Conducting a research trip to report findings back to the Timorese research group, organisations and the surveyed communities was the final participatory action research cycle (PARC) planned for the [Timor-Leste Coffee and Poverty Project](#). In order to streamline results a report was compiled ([Coffee, Poverty & Economic Development in Timor-Leste: Research Report 2013](#) available in Appendix H) that was written in English and Tetum to highlight results that were obtained on the topics of [Coffee](#)
Production and Yields, Poverty and Coffee Production, Household Welfare and Food Security, and Rice and Price. It was important to make this report informative yet translatable and relevant to groups that may read it.

Problem Definition
Reporting back to communities is an important part of participatory action research (PAR) and for the Timor-Leste Coffee and Poverty Project. Therefore the problem to address in this PARC was ‘how to report study results back to agricultural communities in Timor-Leste.’ Four meetings were planned for a final research trip conducted from 15th of July 2013 to 21st of July 2013 to address different groups and gain other insights from the community and invited groups; these were the Timorese research team, general stakeholders, community in Ermera and AusAID. The first three groups will be reported on in this PARC as the AusAID meeting was primarily focused on presenting the report and finalising project objectives with AusAID being the funding body of the Timor-Leste Coffee and Poverty Project.

5.5.2 Action phase of report back (Phase 2, PARC 5)
This section explores the second phase of action for PARC 5 (Figure 46). The first reporting back meeting to the Timorese research team is discussed as well as the public launch to stakeholders. The reporting back community meeting in Gleno is also discussed.

Research team
On the 16th July 2013 an informal meeting to thank the Timorese research team for their involvement and to present the household survey results was held. This meeting was held at UNTL and 14 of the 18 members of the team attended. It was exciting for the team to see how the hard work collecting the data had been transformed into a research report with formal presentations to be later presented at the stakeholder public launch and at the community meeting in Ermera. Each team member received a printed copy of the report to
keep. PowerPoint presentations were given by four Australian team members and two Timorese research team leaders. This also gave an opportunity to practice the presentations and translating that would need to occur for the other two community meetings. The Timorese research team did not provide feedback on the results which was interesting as they had contributed feedback when initial results from Household Survey Round 1 was discussed at the debrief held at the start of the training for Household Survey 2. The tone of the discussion was more accepting of all the data presented which perhaps could be attributed to the now formal presentation of the results. Most members of the team then wanted to attend the public launch to the stakeholders that was being held the following day.

Public launch to stakeholders

On July 17th 2013 an academic workshop and the public launch of the Timor-Leste Coffee and Poverty Project was held at UNTL. The morning session consisting of the academic workshop was targeted at UNTL and MAF staff, as well as invitations extended to AusAID, leaders from coffee buyer groups and other interested stakeholders. The workshop consisted of six presenters, four from the Australian team and two Timorese team leaders. The academic workshop was designed to set the context and give an overview of the study. Table 14 outlines the schedule and topics followed during the workshop.

Table 14: Schedule followed during academic workshop

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:10</td>
<td>Welcome and overview of project</td>
</tr>
<tr>
<td>9:30</td>
<td>Coffee and livelihoods of the poor in Timor-Leste.</td>
</tr>
<tr>
<td>9:50</td>
<td>Understanding coffee-producing households</td>
</tr>
<tr>
<td>10:05</td>
<td>Understanding coffee production and income</td>
</tr>
<tr>
<td>10:25</td>
<td>Morning tea</td>
</tr>
<tr>
<td>10:45</td>
<td>Poverty, location and culture</td>
</tr>
<tr>
<td>11:15</td>
<td>Recommendations for improving household incomes and welfare</td>
</tr>
<tr>
<td>12:00</td>
<td>Discussion and questions</td>
</tr>
<tr>
<td>12:45</td>
<td>Close and lunch</td>
</tr>
</tbody>
</table>
The afternoon session was open to any interested party that could attend and gave a brief overview of the project objectives and scope and the main research results and recommendations. PowerPoint presentations that had been constructed for these presentations were available in English and Tetum and viewed through the use of two projectors so the information could be followed more readily by those who did not speak English. The project champion translated all presentations in Tetum throughout the academic workshop and public launch. Table 15 outlines the schedule followed for the public launch.

Table 15: Schedule for public launch

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:10</td>
<td>Welcome and introductions</td>
</tr>
<tr>
<td>2:15</td>
<td>Brief overview of project objectives and scope</td>
</tr>
<tr>
<td>2:25</td>
<td>Various guests speak</td>
</tr>
<tr>
<td>3:25</td>
<td>Main research recommendations</td>
</tr>
<tr>
<td>3:45</td>
<td>Closing comments</td>
</tr>
<tr>
<td>4:00</td>
<td>Drinks and afternoon tea</td>
</tr>
</tbody>
</table>

**Community meeting**

Letters were sent to the heads of the district, subdistricts, Sucos and Aldeias where the household surveys had taken place to invite them to a community meeting to be held at ETCI in Gleno. They were also told to bring representatives of their communities if they chose. This was a big event and had to be treated with cultural considerations. The room was organised formally and tais and table decorations were organised; lunch was also provided to all who attended. ETCI was chosen as the place to hold the community meeting as it was where the first community meeting was held when the research question first was brought up by the community; ETCI had conducted the initial pilot study, it was located in Gleno, the capital of Ermera, and it had the available space and resources to facilitate a community meeting.

Unfortunately when the meeting was about to begin the power went out, meaning no fans and no slides to show as the team reported back. An informal discussion was therefore held first to introduce everyone, explain the project goals, origin of the project and how the
The community was thanked for trusting the team to conduct this research and that the team hoped it would help the community find some of the answers they were seeking. At this point the power came back on and presentations were made in a similar manner to the previous two meetings. It was decided however in these meetings not to show any maps with income comparisons as it was unsure if this could lead to unease or conflict or friction between subdistricts – however the report was available so all had access to the information if they then wanted to know more details. Only the Tetum slides were shown and researchers presenting in English used separate laptops to read the information in English. When working in cross-cultural settings it is essential for the researcher to be culturally sensitive and for the research approaches used, in this case PAR to attempt to be in alignment with the cultural values of the people participating in the research (Westby & Hwa-Froelich, 2003). The champion translated all English presentations. Community members made notes during these talks and asked the translator for clarification as presentations were made.

**5.5.3 Observations on impact of community meetings (Phase 3, PARC 5)**

This section explores the third phase for PARC 5 (Figure 47). Observations on the process and the outcomes of the community meetings are discussed. Issues the agricultural community in Gleno had particular interest in are also highlighted.

![Plan Act Observe Reflect](image)

*Figure 47: PARC Finder – observation phase of PARC 5, observations on the impact of community meetings*

**Public launch to stakeholders**

Many more stakeholders attended than was originally thought. These stakeholders were from AusAID, UNTL, MAF, CCT and other coffee buyer groups. The results were received well, the presentations tried not to be too controversial, keeping in mind the post-conflict nature of the community, as the goal was to create specific and general discussion on coffee.
Community meeting in Gleno

At the end of the presentations there was an impassioned speech by one of the subdistrict heads. The speech lasted for about five minutes and during this time it was not known to the Australian research team what was being said; it sounded as though he was annoyed and perhaps angry. However once the translation began it turned out he was very impassioned as he was very pleased with the research and thanked the team for coming back to tell them the results as they did not think that this would eventuate even though letters had been sent before and after the study saying that this meeting would take place, as well as a report being made available to anyone interested.

Another community member asked why the team did not all speak Tetum since the research was being undertaken in Timor-Leste. Before an answer could be given by the Australian team a subdistrict leader answered saying that the team brought other skills, this is why we all work together. If the Australian team had to learn the language of every country visited they wouldn’t be able to do the job, that is why it had to be collaborative.

A main point that the community wanted to discuss was parties. The subdistrict, Suco and Aldeia heads were very interested in learning to teach their households to budget more and identified that they found the parties to be of big concern for the welfare of the households. Information on Timorese organisations in Timor-Leste that they could contact to assist was provided as well as comparisons of similar issues in other countries discussed. The issue of rice distribution was also raised and through discussions the leaders started to talk about buying rice in larger quantities and distributing to the households themselves at closer to cost price so the over inflation of cost was not passed onto the households. They did not realise how bad the situation was until these issues were raised during the presentation.

Leaders also commented that they wanted training for their communities but were not sure how to get the growers to change; they identified it would be a very slow process. Friday et al. (2006) also states that agricultural projects in Timor-Leste can take time including the allowance for a slow change in viewpoints. Aldeia leaders said they ‘needed good data so thank you, we will take back to communities.’
5.5.4 Reflections on Participatory Action Research Cycle Five (Phase 4, PARC 5)

This section explores the fourth and final phase for PARC 5 (Figure 48). The importance of PAR for engaging agricultural communities is discussed. Issues of credibility and cultural context are also introduced in preparation for further discussion in Chapter Six.

![PARC Finder – reflection phase of PARC 5, reflections on the outcomes of reporting back at community meetings](image)

The importance of PAR in engaging agricultural communities in research, especially in a post-conflict nation was evident when community leaders expressed surprise that the team for the **Timor-Leste Coffee and Poverty Project** had returned to report back to the community. Stewart and Draper (2009) comment that when they reported back their findings to three indigenous communities in Canada, people were very surprised that researchers had actually taken time to come back to their community. They believe that reporting back is essential when working within communities which develops and maintains important relationships with the researcher.

Each PARC involved the development, extension and continuation of research relationships with the research collaborators from UNTL and MAF whose perspectives were essential to understanding the issues explored. Strategies connecting these organisations are needed to support the communication process, which is an extremely important and essential part of PAR in that it empowers participants in their own process of development and is a two way process of sharing information (Oliveria, 1993; Coldevin, 2002). Communication being an essential component of PAR, was established between the researcher and translator during the initial research meeting in Timor-Leste.

Communication channels were established immediately through exchange of contact details.

The way in which researchers work with expectations of the participants involved in the research is also important, with a need to tightly define expectations since a central theme in the success of PAR is expectation management (Starkey & Madan, 2001). The issue of trust is very important in Timor-Leste being a post-conflict country typified by a breakdown in trust (Lothe & Peake, 2010) which is an indication of disempowerment.
(Kieffer, 1984). The process of PAR involves trusting in the local people to identify and construct solutions to their own problems in a more effective manner than an outsider could (Angeles, 2005).

The feedback received from the results of the project both in terms of its intellectual rigour and as a capacity building process proved to be mutually beneficial. PAR allows for the inclusion of participants who have different skills and knowledge, and for the participants to critique the research process which gives the potential for the results of the research to be accepted and achieve ownership (Mackenzie et al., 2012). The involvement and knowledge of Timorese staff was critical to accomplishing the household survey research objectives, and to completing the surveys within the timeframe. This in turn promoted local ownership of this research.

Reflection on the role of the researcher

While sometimes it felt as though as a researcher I was removed from the process in parts, it became more evident as the process continued that this was a beneficial position as this allowed opportunities for empowerment and capacity building to occur. It also allowed the process of PAR to unfold and take slightly new directions when opportunities arose. The role of a facilitator in this process should not be underestimated. To know when to step in and when to step back. The researcher needs to keep an open mind, be aware of their own and others’ bias and grow with the collaborators as well. Researchers may omit data in order to confirm their own beliefs which is why PAR is so important since it ensures reflexivity in the research process protecting the researcher from reinforcing their own values and assumptions (Mackenzie et al., 2012). It is so important to be honest and manage expectations, especially your own during PAR projects, and especially in a setting such as Timor-Leste.
Reflection on participatory action research for empowerment

The problem task for participatory action research cycle five was to focus on continuing to build on the collaborative approach of the Timor-Leste Coffee and Poverty Project and determine ‘how to report study results back to agricultural communities in Timor-Leste.’ It was important to report back to all stakeholders, research collaborators and the communities involved in the research. Reporting back to the Aldeia community with only Tetum slides rather than English was an attempt to minimise the distance between the two languages and cultures and make it more accessible and familiar, even though the mode of a presentation and PowerPoint would still be a foreign concept in many ways. It is important to note that Mohan (2006) warns about a weakness of PAR being that it relies on linguistic ways to represent information with diagrams and reports which is a western model of sharing knowledge. He suggests that the interpretation of what is seen will differ being in the cross-cultural context and that therefore PAR is biased toward a western view and away from the local knowledge because only locals who are familiar with these media will have their voice heard.

The community meeting brought rural communities together as it was a shared concern. The report was given to the community as a way for them to take charge and empower their own communities with the knowledge contained within the report. Reporting back in a culturally appropriate way was empowering for everyone. The research team strived to be culturally sensitive and acknowledge their role as facilitators, collaborators and partners.

The community were the ones who originally asked the question that was researched and now were given the results of their question. Attempts were made to be mindful of cultural considerations during the reporting back, e.g., venue chosen, invitations being inclusive, reporting in Tetum, giving them a voice to ask informed questions and offering case study examples to inform them of options that could be considered. Mutual respect was given, we tried to be culturally appropriate and a community leader defended the Australian research teams skill set when another member asked why we couldn’t speak Tetum. The research had a useful purpose. It gave answers to questions that people were actually interested in and offered a picture of what was actually occurring. It had real world relevance. It was handed back to the communities involved to move forward with that knowledge. Empowerment themes that have arisen from participatory action research cycle five at an individual, organisational and community level are outlined in Figure 49.
5.5.5 Conclusion of participatory action research methodology

The five participatory action research cycles discussed in Chapter Five explored the evolution of the Timor-Leste Coffee and Poverty Project and the opportunities for empowerment that existed within each cycle. As each participatory action research cycle was explored there was an increasing understanding of the role of participatory action research for empowering agricultural communities (Figure 50). The issues and challenges of empowerment in participatory action research and how this fits within the context of Timor-Leste as a post-conflict country will be discussed in Chapter Six.
Figure 50: Increasing understanding of the role of participatory action research for empowering agricultural communities
Chapter Six: Discussion and empowerment themes

6.1 Introduction

Chapter One established the issues that exist for less economically developed countries (LEDCs) in the context of development and highlighted the challenges for researchers working in this area. The Timor-Leste Coffee and Poverty Project was introduced, as was the scope and research contribution of this thesis. A review of the literature, presented in Chapter Two, explored further the theories of development with a focus on post-development theory (PDT), particularly in the context of post-conflict countries. Chapter Two also provided a summary of the challenges of implementing aid and research in the post-conflict, LEDC context and set the scene for a discussion on the importance of capacity building and empowerment, particularly in cross-cultural projects. Chapter Three extended the literature review to focus specifically on the unique context of Timor-Leste, providing information on the historical, social and cultural situation of the country, and highlighting the importance of the agricultural sector in Timor-Leste’s development. The research design was outlined in Chapter Four and focused on the methods used for designing and collecting the household survey data while justifying the chosen methodology of participatory action research for conducting the Timor-Leste Coffee and Poverty Project. Five participatory action research cycles (PARCs) were introduced, as were technical and ethical considerations. Chapter Five then examined in detail the five PARCs that took place to conduct the collaborative Timor-Leste Coffee and Poverty Project and started to pull together empowerment themes, and participatory action research (PAR) tools into nested Venn diagrams that captured this information at individual, organisational and community levels to better understand the role of participatory action research for empowerment in the research context.

Chapter Six now provides a synthesis of the previous chapters by relating the relevant literature to the experiences, lessons learned and knowledge gained through the Timor-Leste Coffee and Poverty Project to discuss best practice and challenges for researchers conducting cross-cultural research in LEDCs and in particular, post-conflict countries. This chapter also aims to address the role that coffee plays in development on a household scale through a summary of key findings from the Timor-Leste Coffee and Poverty Project and the inclusion of the Coffee, Poverty & Economic Development in Timor-Leste: Research Report 2013 (Appendix H). It is suggested that in the development
context, the process of research can be just as important as the research project’s data obtained. Flynn et al. (1994) suggest that using the process of action research is essential to empower communities with both the community and the researcher gaining more knowledge of the situation being investigated. It is also suggested through this case study that there are key processes that can be applied to other research projects, within and outside of the Timor-Leste context, to conduct empowering research while maintaining the rigour and validity of the research methodology. A number of themes relating to empowerment were identified which included power dynamics, communication, language, mutual respect and trust, collaboration, relevancy, enhanced capacity, expectation management and time. Using the knowledge gained through both the literature and the empowerment themes raised through the participatory action research cycles, a conceptual model for empowerment is proposed using the cycles of participatory action research, to guide researchers working in LEDCs, and in particular post-conflict countries.

6.2 Project development through participatory action research

At the beginning of the Timor-Leste Coffee and Poverty Project, the researcher defined a research question that was specifically aimed at developing baseline knowledge about the coffee growing households in Timor-Leste through an empowering research approach, in this case through PAR. As reflected upon by Sankaran, Hase, Dick and Davies (2007) action research is about learning through the process of experience and not simply acquiring skills and knowledge. Morford et al. (2004) state that a PAR approach is very valuable in empowering rural communities since it includes themes of sharing power and responsibility, decision-making and benefits obtained from the research.

In the initial stages of the research process it was planned to focus specifically, for this thesis, on how fair trade was impacting the coffee producing households in the district of Ermera, in Timor-Leste, due to the researcher’s desire to investigate the social justice elements of the research and the confusion around the value of fair trade that anecdotally had been brought to the researcher’s attention. Unfortunately, with the start of Household Survey 1 and the main coffee cooperative Cooperativa Cafe Timor (CCT) dropping its fair trade certification, this was no longer a viable direction to investigate through the household survey data.
Another direction that was then considered for the thesis focus was the use of Geographic Information Systems (GIS) to analyse the household survey data to relate spatial characteristics of households and communities to economic and social outcomes. While Global Position System (GPS) points were recorded for households surveyed, a preliminary analysis of the available GIS data provided by ALGIS brought the accuracy of this data into question. Metadata was unavailable for much of the data, increasing the difficulty of an accurate, meaningful analysis. As GIS allows for the production of maps which are a very visual tool for representing information, there was the danger of reification of concepts as people could be making decisions based on incorrect data in the relational database.

It was therefore decided against pursuing this line of inquiry for this thesis as the main focus was still on conducting the household surveys. Without the existing GIS data layers being complete and accurate, the production of maps with the household survey data could be very misleading and potentially lead to further issues for the coffee sector and the production of meaningful research. However, within the scope of this thesis was building in empowerment opportunities and GIS was addressed in this regard. Training was organised upon request for the GIS department ALGIS which built upon existing skills to allow the department to start taking more control of their intellectual property through a process of ‘cleaning up’ the data and validating it where possible and then using these datasets in the training. This training then allowed for increased capacity and confidence to make future decisions regarding the data organisation and to discuss their own data needs.

With the challenges in completing the research for the Timor-Leste Coffee and Poverty Project it became apparent to the researcher that not only was the research project collecting valuable information on the coffee growers through the household surveys, there was valuable information on the process of conducting cross-cultural research in a post-conflict context through PAR. Detailed observational notes and reflections were collected during the research project and the PAR approach to the overall project allowed meaningful development and change to occur as the process unfolded. The ‘reflection phase’ of an action research cycle requires flexibility to change when needed. Dick et al. (2015) explain the need for and benefits of flexibility when engaging in complex research that allows for the requirements of the moment being responded to, with understanding growing as the research continues. Participatory action research allows for this flexibility while still bringing structure to the process. It was therefore acknowledged that there were
two main outcomes developing from this research project that aligned with the two thesis research questions identified in Chapter One. The first outcome was the original data collected from the household surveys to obtain information on the coffee growing district of Ermera in order to gather relevant baseline data. This outcome addressed research question 1 of ‘what role is coffee playing in the development of Timor-Leste households’ and is evidenced in the Coffee, Poverty & Economic Development in Timor-Leste: Research Report 2013 (Appendix H) and through the summary of key findings from the Timor-Leste Coffee and Poverty Project in section 6.3 of this chapter. The second outcome, which has been explored more fully in this thesis, addressed the second and main research question of ‘how can cross-cultural research projects be conducted to achieve research outcomes and promote empowerment and engagement for communities in post-conflict, less economically developed countries?’ This outcome has been explored through the participatory action research cycles outlined throughout Chapter Five and will be further addressed through discussion of main empowerment themes and challenges and the construction of a conceptual model in section 6.4 of this chapter.

6.3 Summary of key findings from the Timor-Leste Coffee and Poverty Project

The Timor-Leste Coffee and Poverty Project examined the ways in which the coffee sector operates in Timor-Leste, with a focus at the household level. This study sought to understand the ways in which coffee producing households manage their coffee production and interact with the market while also examining the social impacts on household members of being heavily reliant on coffee as their main source of income. This is particularly relevant to Timor-Leste as it is the poorest country in Asia and the coffee growers are among the most vulnerable in the world coffee sector (Khamis, 2015). A collaborative research team involving members from Southern Cross University, Monash University, the National University of Timor-Leste and the Ministry of Agriculture and Fisheries engaged with local Aldeia leaders and coffee growers to visit and survey more than 800 households twice (in February 2011 and August/September 2011) to learn how these households live and engage in coffee production (results on coffee production relate to the 2011 coffee harvest). The study focus was on an economic analysis of the connection between coffee growing activities and welfare at a household level with the project seeking to address issues around poverty reduction among coffee growing
households and understand the role of coffee in the development of these Timor-Leste households.

In relation to the 2011 coffee harvest cherry is the predominant form in which households sell their coffee (68% of households) with the vast majority of cherry sales to CCT (around 81%). Households reported a range of prices for their coffee. Cherry sold mostly for 50 cents per kilogram, with some variation of prices falling as low as 20 cents, and going as high as $1.00 per kilogram. Parchment sold for an average of almost $2.00 per kilogram. Notably, this represents a lower rate of return than selling cherry, assuming 5kg of cherry is needed to produce 1kg of parchment. This is despite the extra work involved in processing cherry to parchment. Results indicated that early in the season most coffee is sold as cherry, but as the season progresses, more is sold as processed product. With the need to sell cherry within 24 hours of it being picked, the late-season sales are quite likely product which was harvested earlier, and could not be sold at the time due to lack of access to the market. Therefore the choice to process cherry to parchment appears to be primarily driven by timely access to market. Improving the road network in Timor-Leste will allow better access to market for farmers (World Bank, 2013) and therefore the potential for more choice when deciding in which form to sell their coffee.

When looking at parchment-equivalent volumes (coffee sales from all forms of coffee sold over the harvest season (cherry, parchment, dried bean converted to kilograms of their equivalent in parchment form), 67% of households sold less than 100kg at an average price of $2-$2.50 per kilogram which represents very low levels of annual income for the vast majority of households. More than half of the households surveyed relied on coffee for the majority of their income, with coffee comprising an average 53% of household income across the survey. Two-thirds of households surveyed earned $250 or less from their annual coffee harvest. This concentrated reliance on one volatile commodity leaves households vulnerable.

The average yield for these households was 204kgs/ha, around 20% of the average in the region for smallholder coffee (World Bank, 2011a); 60% of households had yields of less than 100kgs/ha. Training programs have been implemented by various organisations in order to address these low yields and 14% of households reported receiving training in the previous four years. More than half of these households reported the training was through CCT and 35% coming from the Ministry of Agriculture and Fisheries staff. The reported
training activities included pruning, dealing with disease, and the rehabilitation of coffee
trees. Of those who received training, 77% reported they tried new practices as a result of
the training, and 83% of these reported improved yields as a result. When households that
received training were compared to those that had not, there was found to be only a 6% increase in yield per hectare when training had been received indicating that there is still
much room for improvement.

Most households surveyed rely on coffee for the majority of their income, with 27% of
households reporting that all income is from coffee. The proportion of income that is
earned from coffee is lower for those households with higher total incomes. Virtually no
households were earning high incomes as a result of coffee. Any households that earned
relatively high total incomes did so through some other form of labour. Through these
results in this rural economy almost the only viable path out of extreme poverty is through
non-agricultural labour income. In the harvest season, it is common for school-aged
children to help with the family’s coffee harvest. Even though part of the harvest period is
covered by annual school holidays, 44% of secondary school children who helped with the
harvest did so during school time. This represents a substantial disruption to the education
of these children. Relying on coffee as a main source of income also results in difficulties
surrounding the effects from the seasonality of income. Results showed that in February
(before the coffee harvest season) 50% of households had an average of one meal or less
per day compared to 21% having this small number of meals in August (after the coffee
harvest). Overall 45% of households consumed fewer meals or smaller meals each day in
February than in August.

The survey also collected information on the price that households paid for rice in both
rounds of the survey as rice is the most common source of basic nutrition. Often in rural
areas of Timor-Leste rice is purchased in smaller quantities than a sack, particularly during
times of low income. The price of rice per 25kg sack averaged around 68 – 78 cents per
kilogram, being 10 cents more in February compared to August. It is however more
common for households to purchase rice in small tins of less than one kilogram.
Purchasing rice in these small quantities costs 30 – 40 cents per kilogram more than the
sack price, meaning that there is a 50% price mark-up. The results show that the majority
of households are paying substantially more for rice in the non-harvest season, when they
are most short of income. Food insecurity is very widespread particularly in the upland
rural areas such as the study area of Ermera, with food shortages common between November and March (Fang, 2006).

The challenges of development in Timor-Leste are great, especially in poor, rural areas. The findings of this research suggest that in the medium term at least, investment in building the incomes of coffee growers will provide a viable and broad-based means of improving welfare of poor, rural households. Options such as diversification into other agricultural activities and labour employment need to be considered to help households achieve higher incomes. When considering these options it is important that participatory approaches are used that involve and respect the communities.

Too often, development initiatives that seek to help the poor do not take their knowledge or concerns seriously and do not view them as the best agents of their own development (Boersma, 2009). There are not only economic influences to consider, as social and cultural considerations play a large part in Timor-Leste, especially in the study area that is largely represented by the Mambai. The Mambai have a unique cosmology as discussed by Traube (2007) and are loyal followers to indigenous customs and beliefs.

6.4 Main empowerment themes and conceptual model

6.4.1 Overview

During the research process of the Timor-Leste Coffee and Poverty Project, a number of empowerment themes were identified particularly around the empowerment of the researchers (both the Timorese researchers and Australian researchers) as well as the organisations and communities involved in the Timor-Leste Coffee and Poverty Project through the five participatory action research cycles (PARCs) explored in Chapter Five, and the relevant literature identified throughout this thesis. These themes, as well as PAR tools and considerations, were identified at the end of each PARC in nested Venn diagrams and outlined at the three empowerment levels of individual, organisation and community. The role of PAR in providing opportunities for empowerment is now explored by discussing the main empowerment themes and challenges that emerged during the Timor-Leste Coffee and Poverty Project and a conceptual model based on these themes is proposed.
6.4.2 Main empowerment themes and challenges

Power dynamics

Identifying power dynamics and renegotiating power is an important overarching theme in the process of empowerment. Haugaard (2012) discusses the aspects of power as, *power over, power to and power with.* Timor-Leste has a long history of experiencing *power over,* through colonisation and conflict which has left the country experiencing issues of disempowerment. While there were issues of *power over* occurring in this research such as the Australian team in charge of the research project and the team seen as the international ‘expert’, through the five PARCs the power dynamics were shifted in order to share power and to empower the people who were involved with the **Timor-Leste Coffee and Poverty Project.**

Smith argues that the relationship between researcher and researched “... *has traditionally benefited the researcher and the knowledge base of the dominant group in society*” (Smith cited in Goulding et al., 2016). PDT challenges the power dynamics of traditional development theory and policy (Matthews, 2004). There are power dynamics at play between the “expert” and others, and PAR recognises these power inequalities (Mohan, 2006). While conducting the research for this project, the researcher attempted to be mindful of their role in the power dynamics reflecting in PARC 1:

“*However, as much as I wanted to believe at the time that as a researcher I was stepping back, the reality is that the role of the researcher is still central to the process due to the power that is held. Being aware of this power dynamic however can lead to greater opportunities to bring empowerment into the process.*”

The PAR undertaken through the **Timor-Leste Coffee and Poverty Project** aimed to share power and allow the communities involved in the research to work through their own knowledge base and assumptions, and attempt to remove the desire to please the ‘western researcher.’ This was very important to the empowerment process since:

“*The power over other societies is not only a phenomenon connected to violent incursions, military invasions, colonial conquests and externally administered governance; it also expresses a relation of knowledge that posits a Western superiority over the non-West*” (Slater, 1995, p. 32).
Stewart and Draper (2009) suggest that the power imbalances that are present between researchers and communities in cross-cultural settings are often maintained through the challenges of communication. Researchers working in these contexts, particularly with the added consideration of post-conflict trauma, need to be aware of the challenges and opportunities that communication can bring. In the initial stages of the **Timor-Leste Coffee and Poverty Project** the Australian researchers and the Aldeia communities collaborated through facilitated discussions with ETCI to enable communication, and power over initiating the research process was shared. This was an important element of the research as community empowerment is more than just involvement, participation or the engagement of communities, it is a process of re-negotiating power (Baum cited in Ruechakul et al., 2015).

During the project the researcher learned conversational Tetum language skills which were appreciated by the Timorese research team as this showed the researcher’s effort to show respect. As a country with a long history of disempowerment this was also important for attempting to shift power dynamics. Learning basic language skills can also be empowering for the researcher as it can improve confidence and ensures the researcher is a more active participant in the process. In the context of Timor-Leste, Brunnstrom (2003) noted that many Timorese felt that internationals were arrogant and not interested when they do not learn Tetum. Researchers should make an effort to learn basic language skills so greetings and small phrases can be given in the local language to demonstrate respect, encourage dialogue between participants and facilitate the re-negotiation of power.

Researchers working in cross-cultural settings are often criticised for maintaining power inequalities in the research relationship through collection of data and then leaving with no feedback given to those who participated in the research (Smith cited in Stewart & Draper, 2009). The **Timor-Leste Coffee and Poverty Project** through the use of PAR, aimed to give power through the collection of usable knowledge to both district and Aldeia leaders in order to facilitate decision-making in their own community instead of being reliant on the intervention of outside organisations. When conducting cross-cultural collaborative research projects it is important to conduct the project so that it is sensitive to changing needs and is relevant to the communities involved. PAR aims to assist people who are socially and economically marginalised by providing relevant knowledge to enable increased power in decisions that directly affect them (Kothari & Minogue, 2002).
Power was shared with the lecturers at UNTL through various means such as collaboration, training, skill development and shared decision-making, rather than the lecturers just being a “consultant” on an international project requiring a translator thus allowing for working collaboratively rather than in an authoritative manner (Perkins & Zimmerman, 1995). Through the initial research question originating from the Aldeais instead of the foreign researchers, some of the power that was lost through the colonisation period and through the period where aid was flooding into the country was able to be shifted back in a small way. Gonslaves et al. (2005) expresses the importance of promoting ownership in PAR as it has the potential to generate social transformation.

**Communication**

Communication was another important empowerment theme identified through the entire PAR process with one of the central requirements for engaging communities being effective communication (Moller et al., 2009) and a very important component of the planning of participatory projects as it involves and empowers the participants in their own process of development (Oliveira, 1993). Gibbs (2001) explains that ideally communication will be honest, open, respectful and timely which will enable the establishment of relationships of trust between researchers and research participants.

Westby and Hwa-Froelich (2003), emphasise undertaking PAR with meaningful and appropriate communication. Researchers and consultants working in cross-cultural settings should endeavour to understand cultural issues and considerations in order to initiate this communication and establish collaboration that is based on trust and respect. The sharing of food is one example of how this can be facilitated (Westby & Hwa-Froelich, 2003) through setting the context for effective communication. The researcher was made aware of this consideration during the training session in PARC 1 that commenced at the beginning of the pilot study where the first two hours consisted of formal introductions as well as a social lunch; ceremony and tradition are extremely important to the Timorese.

In the reflection phase of PARC 2 the personal reflection discusses how meetings in Timor-Leste that were attended by the researcher made a point to provide and present food and water thoughtfully to guests:
“As we entered the office it was evident the care that had been taken to create the space, tais had been laid on the tables, water and food had been provided, the best chairs were on our side of the table – the respect shown was not unnoticed and I only hope we are showing the due respect back.”

The Australian team being mindful of this consideration catered lunch and refreshments during the training of the research team for conducting the household surveys. This also created a space for an atmosphere that allowed for the building of trust and respect through the informal conversations which encouraged the strong collaborative relationships that were being built.

With communication being difficult in Timor-Leste due to technology constraints and also language differences and challenges, it was important to attempt to follow the advice of Smith to achieve effective communication, through the researchers communicating face to face, sharing their knowledge generously and looking and listening before talking (Smith cited in Hall, 2014). PowerPoint presentations were used while reporting back to the community and given in both a Tetum and English version on two different screens in order for the information to be readily followed with the spoken information being translated into Tetum, thus allowing for the efficient flow of information during the presentation. With power outages being a regular constraint during this project, the use of graphic communication was very important to the success of the project; in PARC 2 when the data projector could not be used butcher’s paper was utilised for the training session with drawings and basic concepts depicted to facilitate the discussion.

As the PARCs progressed and the value of graphic communication was better understood, it was utilised to a greater extent. This lead to improved understandings and skill development, promoted collaboration and allowed confidence to build within the whole team, as the challenges present with language barriers were minimised and contributions were easier to make. Using graphic communication can be complex and it is not always obvious how to make the best use of it. In PARC 2 staff did not understand how to use the GPS devices they had been given by an outside aid organisation as all the instructions were in English so it was not easy for individuals to teach themselves. This can be a common problem in cross-cultural communication. The manuals did however include images, so a
discussion was raised with the training participants on how to use the tools available to their best advantage, thus gaining greater access over resources. The use of mind maps in PARC 3 was also an effective graphic communication device that allowed for the Timorese research team to more readily contribute to the discussion and research project development. In order to provide opportunities for empowerment in cross-cultural projects, researchers need to determine and utilise relevant and useful communication techniques.

**Language**

Language carries within it cultural, social and political meanings, values and beliefs which may not be able to be translated easily due to an equivalent not being able to be easily identified in the language into which it is being translated (Temple & Edwards, 2002). This highlights the importance and challenges of translators as Simon suggests:

> “The solutions to many of the translator’s dilemmas are not to be found in dictionaries, but rather in an understanding of the way language is tied to local realities, to literary forms and to changing identities” (Simon cited in Temple & Edwards, 2002, p. 3).

In a cross-cultural project, where the country of research is multi-lingual, additional challenges are present for the researcher, research collaborators and other affected communities. While Tetum and Portuguese are the official languages of Timor-Leste (Drysdale, 2007) and English and Bahasa Indonesia the designated working languages (Taylor-Leech, 2009), there are more than 30 languages or dialects used in Timor-Leste (World Bank, 2005b). Therefore language was an extremely important theme while undertaking the **Timor-Leste Coffee and Poverty Project**.

Language has specific meanings and without an experienced translator, meanings can very easily get confused. It is important for all cross-cultural collaborative projects that the meaning rather than just the words are translated. In all five PARCs, translators were crucial to the research process (Shimpuku & Norr, 2012) to bridge the language barrier that existed between the Australian and the Timorese research team members. In PARC 2 when the geospatial training took place it was not adequate to just have a good translator who could translate between English and Tetum, as the language was technical, therefore a technically informed and experienced translator was used who was also the project ‘champion.’ The advantage of the project ‘champion’ also being the translator is the
overall involvement is much more collaborative in nature and can result in more effective project outcomes.

Westby and Hwa-Froelich (2003) emphasise the importance of using translators in cross-cultural settings with it being crucial to select someone who has a knowledge of both the area of study and the culture. Providing opportunities for the translator to be empowered promotes further benefits in cross-cultural collaborative projects as it promotes using resources effectively, co-creation and power sharing, and promotes effective communication.

*Mutual respect and trust*

Mutual respect and trust provides opportunities for empowerment, whereas powerlessness instead can elicit feelings of distrust (Kieffer, 1984). This is especially relevant in a post-conflict country where there are underlying issues of lack of trust running through the society (Lothe & Peake, 2010). Hepi et al. (2007), believe that trust is key to undertaking cross-cultural research and a key issue in collaboration, yet there is little guidance for researchers on how to undertake cross-cultural collaborative research with Moller et al. (2009) stating that mutual trust is a basic requirement when conducting cross-cultural PAR for empowerment; mutual respect is also an essential component (Ruechakul et al., 2015).

During the planning phase of each PARC, language barriers needed to be identified; these barriers can make it hard to establish fundamentals such as trust (Tenzer, Pudelko & Harzing, 2014). Due to these language barriers multiple mediums were used to overcome these communication challenges including communication through translators, graphic communication, sharing of food and humour. A relationship of trust was built between the researcher and the Timorese research team through the researcher developing basic Tetum conversational skills which were appreciated by the team. As reflected upon by the researcher in PARC 3 this contributed to building mutual respect and:

"...also provided a chance to add humour to the training and demonstrate that it is OK to make mistakes with language; just have a go and then get the translator to help if needed."

Due to the amount of mutual respect and trust that must exist between foreign research teams and local collaborators, having the same person fulfil the role of ‘champion’ allowed that person to have intimate knowledge of all stages of the research project. Therefore a
relationship of trust was crucial between the researcher and the project ‘champion’ and continued to strengthen throughout the project and beyond.

Westby and Hwa-Froelich (2003) recommend that researchers working in cross-cultural settings establish respect and trust through learning about the culture; especially beliefs and practices. Through the researcher learning basic Tetum conversational skills and taking the time to participate in and learn about Timorese culture, respect was cultivated and relationships grew between the Australian researchers and Timorese research team. These relationships have continued past this project with the researchers being welcomed back as friends and colleagues in future trips to Timor-Leste.

The mutual trust and respect that was established through the **Timor-Leste Coffee and Poverty Project** enabled the reporting back to the community in PARC 5 to be well received by the community. Trust had already been established and strengthened as promises were kept with the community with the same research team doing the first survey and then the follow up survey. When the reporting back took place at the public launch for the Aldeia community, although PowerPoint facilitated the flow of information, the emphasis was on open discussions that allowed any Aldeia community members to question or comment on the discussion through the translator. The Sub-district, Suco and Aldeia leaders were very interested in learning how to assist households with budgeting, discussed solutions to the issue of the price of rice and drew on the experience of other leaders to find a common approach. Participatory action research trusts that the local people can recognise and create their own solutions for their own problems more effectively than an outsider could (Angeles, 2005) and works to empower in order to assist people in LEDCs to find solutions to problems that are relevant to them (Westby & Hwa-Froelich, 2003).

**Collaboration**

Resnik (2015) when discussing the merits of conducting ethical research, outlines the values of collaboration as being mutual respect, trust, accountability and fairness. In addition when collaborating in a cross-cultural setting through PAR, it is important for the research to be sensitive and culturally appropriate (Liamputtong, 2010). With this in mind it was an important consideration to the researcher that the **Timor-Leste Coffee and Poverty Project** was collaborative in nature and reflected these values.
In the **Timor-Leste Coffee and Poverty Project** the Australian research team brought survey expertise, research and training experience, resources, and the ability to leverage funding for the project. The Timorese research team brought cultural context, logistic advise and additional country specific knowledge, as well as prior experience and knowledge in agricultural studies. In PARC 1, ETCI staff and students were keen to get fieldwork experience so the collaboration between the researcher and ETCI allowed the research to be completed while skills and knowledge were built upon. Expectation management in this scenario was an important part of the collaborative process, for both the ETCI research team and the researcher to help determine the success of the pilot study. The expectation was that through the collaboration, team building, and trust, relationships would grow that would carry into the following PARC and lessons learned would inform the next stages so that the **Timor-Leste Coffee and Poverty Project** would have improved chances of success in training, implementation and results.

Through collaboration during the planning phase of PARC 3 and PARC 4 the survey was translated into the most appropriate language for each question at the discretion of the translator and a collective decision-making process occurred with the whole research team to finalise wording. This collaboration encouraged greater participation by members and increased the confidence of team members as they were encouraged to have a voice in the project. Through this process, Timorese team members were also better able to explain survey question meanings when in the field in remote locations where only local dialects were spoken and local translators had to be used by the survey teams. This enhanced capacity and leadership qualities within the Timorese research teams and promoted further skill development and problem solving skills. The collaboration that occurred during the GIS training in PARC 2 between UNTL and MAF was an extremely important foundation for the conducting of the household surveys as these groups rarely collaborate through skill sharing. In order for research to be collaborative there must be sharing of power and voice (Salkind, 2010).

**Relevancy**

Undertaking research in cross-cultural settings using PAR, allows for utilising methods that can improve participants’ lives by using their knowledge to find solutions to problems that are relevant to them (Westby & Hwa-Froelich, 2003) with Hohe (2002) arguing that researchers need to understand the local paradigms in order to make their research relevant to the people they are assisting. During the planning phase of cross-cultural collaborative
PAR projects, establishing initial relevancy of the proposed project and who the project is relevant to needs to take place. Research priorities need to be established and also need to be identified so that materials brought into the project and existing resources and infrastructure utilised are relevant to the current and future needs of participants.

When conducting training it is important that training material is relevant to the training task and participants being trained, not just transferring teaching material from one community to another and expecting it to work as effectively. During PARC 2 not all training materials for the geospatial training were using Timor-Leste examples on the first day. This was rectified for the remainder of the training so that all specific examples and scenarios reflected local information so it was more relevant and relatable to participants. The use of the ALGIS database for the GIS training made the training more relevant for the participants who were surveyed after the training and were asked if ‘the training was relevant to my needs?’ with a score of 4.9 out of 5 resulting. The collaboration between these organisations allowed the research project to be enhanced and provided an opportunity to build requested capacity building to the Timorese research partners that was relevant.

The collection of data at a household level aimed to gather information that would be meaningful and relevant to the coffee growers and would allow the Aldeia leaders to make decisions that would be relevant for the coffee grower households. The questions on the survey were structured to ensure relevancy in order for the data obtained to have maximum benefit to the community. For example, this involved including questions on the price of rice and how much income was spent on end of harvest parties as the answers to these questions were particularly relevant to Aldeia leaders.

Reporting back to communities is essential when building empowerment into a cross-cultural collaborative research project. The reporting back needs to be structured so that it is relevant to the community being reported to. In order to streamline results from the Timor-Leste Coffee and Poverty Project a report was compiled (Coffee, Poverty & Economic Development in Timor-Leste: Research Report 2013 available in Appendix H) that was written in English and Tetum to highlight results that were obtained. It was important to make this report informative yet translatable and relevant to groups that may read it. When reporting back to the Aldeia community, a main point that the community wanted to discuss was parties as much of the money made during the coffee harvest was
then being spent by households to celebrate leading to food insecurity in the hungry season. This report provided information that addressed questions that were of relevance to the Timorese people and offered a picture of what was occurring in the coffee households.

The original research question for the **Timor-Leste Coffee and Poverty Project** came from the Aldeia community, and through conducting household level surveys it was intended that the information gathered would also be more meaningful and relevant to the Aldeia leaders to empower them to make more informed decisions and have greater knowledge of their community members. Through having influence over the events and outcomes in their community, the opportunity for empowerment was facilitated (Fawcett et al., 1995).

**Enhanced capacity**

It was an important part of the empowerment process to provide opportunities for capacity building, especially in regard to requested and relevant transferable skills. Capacity building can be described as “the process of strengthening the abilities or capacities of individuals, organisations and societies to make affective and efficient use of resources, in order to achieve their own goals on a sustainable basis” (World Bank, 2016a). An example of building relevant capacity was the creation and implementation of the GIS training program which was in direct response to a requested need for capacity building by UNTL and MAF. It also allowed for the relationship between all organisations involved to grow in preparation for conducting the surveys.

Empowerment assists individuals, organisations and communities through recognising their own ability to make decisions and problem solve and to acquire knowledge and resource skills (Ruechakul et al., 2015). Through PAR approaches the opportunity to expand skills and knowledge of participants is presented. Important to this process is identifying the skills and knowledge that already exist and then to build on these strengths (Angeles, 2005). It is also important not to make assumptions about existing knowledge or skills. This involved being aware of when skills could be shared within the research team, for example in PARC 3 some participants had GPS skills so they also taught their team members how to operate the GPS devices. These opportunities also helped to build the relationships that were forming between individuals and the organisations. This was also experienced in PARC 4 where experienced Timorese research team members assisted the more inexperienced members to obtain more accurate household survey responses.
During the training and skill development it was important to allow adequate time so training was not rushed and understanding could occur. Debriefing sessions aided this where through collaboration, approaches could be refined. Skill development and training also needs to be relevant so collaborators can develop their problem solving and decision-making skills and utilise resources and infrastructure more effectively. The outcomes of this are more insight into the process, expansion of organisation networks (when multiple relevant collaborators are brought in) and recognition of the communitys’ own resources and knowledge.

Capacity building enables people to become self-reliant, solve their own problems and increase self-confidence (Goff, 2006). Increasing confidence improves the learning and collaborative process as participants who may start out quite reserved become more willing to participate as they achieve goals and are more able to recognise their own decision-making and knowledge acquisition skills. Repeating activities with relevant examples to reinforce skills was also important in building confidence and skills. This was apparent in PARC 2 and PARC 3 where as the training progressed and activities were repeated, participants became more visibly happy, vocal and confident. It was reflected upon in PARC 3 by the researcher that:

“During the training it became apparent to never underestimate the power of fun and humour. This set a positive scene for the Timorese survey team to conduct the surveys in the field under quite challenging conditions.”

Expectation management
A central theme to the success of PAR is expectation management with the management of researchers’ expectations very important as well as the expectations of the participants (Starkey & Madan, 2001). The researcher has to embrace the situation, embrace the uncertainty and not try to dictate solutions to this challenge. During the pilot study discussed in PARC 1, the researcher reflected on the difficulties of working in a different culture with different expectations of how work would progress:

“It is so challenging trying to get anything done, people keep saying to me that I am just getting the Timor experience and laugh... Plans are not stuck to, they change without notice and communication starts and stops
without warning. I am constantly waiting and wondering if we will ever get this pilot study done."

Calman (2002) emphasises the importance for researchers when working in LEDCs to acknowledge how these countries can differ significantly from that of the researcher and that the differences and expectations can be very important to the research process. The researcher came to appreciate this during the project and reflected in PARC 5:

"It is so important to be honest and manage expectations, especially your own during PAR projects, and especially in a setting such as Timor-Leste."

A significant expectation that needed to be managed was the concept of time. The concept of time is an area that requires cultural sensitivity with some cultures starting and ending activities based on clock time and others that do not follow timetables (Westby & Hwa-Froelich, 2003). This was experienced in PARC 2 on the first day of the geospatial training where half of the participants arrived on time, and the remainder were half an hour late or did not make an appearance that day. It is often commented in Timor-Leste about people not turning up on time. However during the geospatial training, once most participants were there on the first day, expectation management was discussed. The Australian research team asked participants to help derive what they expected from the team and what they expected from themselves as a group. The issue of time arose naturally through the discussion and reasons why being on time were discussed. No further mention was made of this, however on day two and all following days of training all participants were arriving early. As discussed by Levine (1997), “the pace of life is a matter of tempo” and it can be difficult to adjust to another culture’s tempo or concept of time. This is something researchers should be mindful of when reflecting on their own expectations of working with other cultures.

**Time**

An important theme that was very relevant to all stages of the Timor-Leste Coffee and Poverty Project was time. It is essential when conducting PAR in a LEDC country such as Timor-Leste to take time to understand the culture and people. The researcher was very aware of the difficulty of a young foreign woman doing research in a patriarchal society and reflected in PARC 2:
“By allowing the trust to build over time I found it much easier to have my voice heard and respected for the contributions I could make. Change takes time...”

By allowing trust and relationships to build over time without rushing the process, the researcher was able to have her voice heard and her contributions appreciated and respected. Adequate time allocated for activities is also an important consideration for cross-cultural PAR. The method of using PAR is time intensive (Mackenzie et al., 2012). Not allowing adequate time to identify the most appropriate project ‘champion’ (and translator if they are not the same person) rather than bring empowerment to the project can lead to disempowerment of all involved. Foreign researchers can be unaware if the information being passed on contains inaccuracies that may never be identified due to embarrassment, due to unfamiliarity with language or if the translator is acting as a gatekeeper who could hinder progress or misdirect without the whole team’s knowledge. Temple and Edwards (2002) discuss the ‘triple subjectivity’ of doing cross-cultural research between those being researched, the translator and the researcher, which shapes the data being obtained for the research project.

Adequate time was needed to be allocated to the project ‘champion’ to translate survey material to minimise misunderstandings in the translated versions. Even though the translations had not been rushed it appeared that the time it would take to achieve accurate translations had still been underestimated in PARC 3 so more time was allocated in PARC 4. In PARC 3 time was also recognised as a major consideration for successful training with enough days allocated to conduct it effectively. Within the training it was also important to allow for a surplus of time so that participants did not feel rushed with adequate time spent on understanding all aspects of the survey implementation. Without adequate time to discuss all necessary aspects the process becomes disempowering as participants get stressed and confidence drops. Time is needed in all phases of PAR cross-cultural collaborative projects and expectations within this need to be managed.

6.4.3 Conceptual model for empowerment through participatory action research

Based on ideas raised in post-development theory (PDT), the empowerment themes and participatory action research tools that were identified through the Timor-Leste Coffee and Poverty Project, and relevant literature, a conceptual model for empowerment using
the process of participatory action research is proposed. These concepts were organised into the four processes of action research under plan, act, observe, reflect at the individual, organisational and community levels through the aid of a table (Appendix I). A model is a simplified representation from reality; more specifically a conceptual model is a set of concepts that is used to describe or represent but not explain, a process, object or event (Turban & Meredith, 1991). The conceptual model for conducting cross-cultural research using a PAR approach for empowerment in a post-conflict LEDC (specifically Timor-Leste) is presented in Figure 51.

Traditional development approaches often follow agendas that focus on achieving project aims that have usually been established outside the country of focus using a top-down approach (Craig, 2007). Post-development theory urges alternatives to development approaches though it does not provide clear guidance on how to address this. PDT does however promote alternatives to development that should focus on more ethical engagements in LEDCs. In an attempt to meet the challenge of addressing the concerns raised by PDT, the proposed conceptual model is presented as both guidance and a tool to be used by researchers and communities undertaking cross-cultural projects. It is not an answer to the questions raised in PDT, nor is it meant to be. Its purpose is to draw attention to main themes, approaches and tools and raise discussion points for the researcher going into LEDCs, in particular those that are post-conflict. It does this by promoting PAR as an essential research approach to development based projects to provide empowerment opportunities and allow for more ethical collaborative engagement.

This conceptual model highlights the challenges and guides researchers towards best practice, through integrating empowerment opportunities at each stage of the PAR cycle (i.e. plan, act, observe, reflect) at the individual, organisational and community level. The key themes and tools identified through this case study and the literature that researchers need to take into consideration when conducting this type of research are outlined in each section. These are all framed within the unique context of Timor-Leste. This context relates to and influences each section of the conceptual model and thus guides the researcher to take these into consideration at each stage of the research process and can be adapted to suit specific project needs. The conceptual model proposed in Figure 51 shows that the research will always be “framed” by the country’s or community’s context; the importance of this should not be underestimated by a researcher.
A difficulty when using models to analyse situations, is to achieve enough simplification without losing realism (Meredith, 1993). The words used in the proposed conceptual model reflect the key themes that are applicable for each stage of the PARC to build in empowerment opportunities at the individual, organisational and community level. In the context of this Timor-Leste based case study it can be seen from the conceptual model that in addition to the specific themes in each section, time is reflected in all sections through the graphic of a clock. Participatory approaches take time (Friday et al., 2006), developing good relationships takes time (Westby & Hwa-Froelich, 2003) and developing participation skills takes time (Kieffer, 1984). Time is important in various ways through the stages of research with different cultures having different concepts of time (Westby & Hwa-Froelich, 2003). Also featured is the cycle of identifying power dynamics and the renegotiation of power throughout the PARC process. Post-development theory discusses the unfair power dynamics that can exist in the development context (McKinnon, 2008) with the sharing of power being an important aspect of participatory research (Morford et al., 2004). In the post-conflict context working with PAR, both time and power dynamics require understanding by the researcher. An additional use of this conceptual model could be as a tool for graphic communication whereby the researcher and the engaged community work together to identify important points for each stage of the research process and to build in empowerment opportunities for all three levels of individual, organisation and community. It is the intention of the researcher that this conceptual model will be further developed with additional research and testing.
Figure 51: Conceptual model for the role of participatory action research for empowerment
6.5 The significance of participatory action research for empowerment

While information about the coffee sector in Timor-Leste is available (Oxfam, 2004) little was known about how it affects the most vulnerable in the industry, the coffee growing households. Therefore an important objective of the Timor-Leste Coffee and Poverty Project was to fill this information gap by making the household the primary focus of the data collection. To engage the agricultural community of Timor-Leste in this research the PAR approach was selected to allow for opportunities of empowerment through undertaking the research collaboratively, with the agricultural community being involved in identifying the issues important to them, assisting with the collection of data, and sharing of responsibilities, which is an important part of participatory approaches (Angeles, 2005).

Dick et al. (2015) describe action research as a flexible process that is cyclical. It allows for flexibility in a planned approach based on the understanding of earlier cycles in the process. This was the nature of the research discussed in this thesis as new directions emerged, such as the requested GIS training discussed in PARC 2, which provided further opportunities for empowerment than the original direction would have alone. Through participation in this training knowledge was acquired and skills enhanced allowing for capacity to be increased for both the individuals and organisations involved. Acquiring and enhancing skills and knowledge is an important aspect of community empowerment (Flynn et al., 1994). In addition this also provided a more satisfying experience for the Timorese and Australian researchers as they mutually engaged in the process.

Through PAR, groups are empowered by participating in decision-making in order to decide the next steps in the process (Morford et al., 2004). This collaborative approach engaged agricultural communities in Timor-Leste from the coffee grower households, through to higher education facilities (ETCI and UNTL agricultural department) and government (MAF). By engaging across these levels appropriate collaborations and empowerment opportunities could be conducted to suit these different communities. This also established a history of engagement and trust that allowed sometimes difficult discussions on ‘ways forward’ to occur in an atmosphere of trust and collaboration rather than a top-down approach which can often be the case in cross-cultural research projects. Moller et al. (2009) believe that the most basic requirement necessary in order to conduct cross-cultural PAR is mutual respect and trust between all parties engaged in the research.
As identified in Chapter Four, action research is a group of methodological frameworks useful in research studies where change may be required, where the knowledge to change does not exist at the start or where change can only be developed progressively through further research and critical reflection. The specific approach of PAR advocates participation in action and research (Ruechakul et al., 2015) with this approach being used increasingly by researchers working in cross-cultural settings as a means of empowerment by assisting people in LEDCs to find solutions to problems that are relevant to them (Westby & Hwa-Froelich, 2003).

Ideas and solutions emerged from the participatory action research project that were identified as being particularly important and relevant to the Aldeia heads. Of particular interest was the issue of rice distribution and the price inflation that occurred when rice was sold in smaller amounts in the district. This information enabled Aldeia heads to discuss buying rice in bulk and distributing it themselves to households. The implications of the post-harvest parties were also of major concern, and the researchers were able to provide information, as requested by Aldeia heads, on organisations in Timor-Leste who could assist on teaching budgeting to households.

Aldeia heads also were very appreciative of the data that the Timor-Leste Coffee and Poverty Project provided through the Coffee, Poverty & Economic Development in Timor-Leste: Research Report 2013 (Appendix H) as it addressed questions that they themselves had raised at the beginning of this process. This information at a household level then empowered the Aldeia heads to start making informed decisions on how to work with coffee growers in their Aldeias. They were very interested in providing training to coffee growers to facilitate improvements but acknowledged that change would be slow.

Participatory action research is collaborative in its approach which can be viewed as a strength or a weakness to some researchers depending on the timeframe of the particular research project since the PAR approach takes time due to slow changes in viewpoints, unexpected events and changing roles as well as the inbuilt flexibility (Friday et al., 2006). Without participatory approaches to research in LEDCs, especially those that are post-conflict with additional challenges (as discussed in Chapters Two and Three), research has the potential to add to the disempowerment that can exist in these contexts. The extra time a PAR approach can take should not be a limitation in these environments. Collaborative
relationships are built on trust and take time and need patience and flexibility (West-by & Hwa-Froelich, 2003).

Researchers working in post-conflict LEDCs are faced with numerous challenges (Lothe & Peake, 2010) as was discussed in Chapter Two. This thesis has addressed these challenges by exploring the processes of the PAR approach to conducting the Timor-Leste Coffee and Poverty Project. The concepts raised in PDT that highlight issues in development informed the approach taken to the research project. PDT highlights problems with traditional development approaches which have been criticised for extending the control of the West into LEDCs (Rapley, 2004) and instead of improving the conditions of the poor have instead put in place obstacles to their social transformation (Robbins, 2005). PDT endorses transforming societies where they are able to develop within their own culturally defined ethics and culture and urges for alternatives to be created and utilised but is criticised for not clearly offering what alternatives could replace development practices (Matthews, 2004). However, some post-development theorists have outlined options for undertaking development in LECDs which are focused on participation and are community-based (Watts, 2005). Therefore, based on the ideas expressed in PDT and the issues it raises while providing minimal clear direction on how to address these problems, a PAR approach was used in this project.

The PAR approach can be built into research projects in order to address some of the concerns raised by PDT, in order to recognise themes of empowerment. Research projects in development contexts need to be more empowering to local communities and the country as a whole yet there is little guidance on how to do this (Hepi et al., 2007). Therefore a significant contribution of this thesis is the in-depth case study explored that pulls together empowerment themes and challenges and the conceptual model that represents the role of PAR in providing opportunities for empowerment.
Chapter Seven: Conclusion

7.1 Introduction

This final chapter concludes the discussion on engaging agricultural communities in research through a participatory action research approach. The significance of the research is discussed as well as the implications for the Timor-Leste, post-conflict context. Wider implications, for the context of development and research in less economically developed countries, are also addressed. Study limitations and possible areas for further research are explored, and the chapter concludes with the researcher’s final reflection on the research experience.

7.2 Significance and implications of the research

This study covered two research questions:

1. What role is coffee playing in the development of Timor-Leste households?

2. How can cross-cultural research projects be conducted to achieve research outcomes and promote empowerment and engagement for communities in post-conflict, less economically developed countries?

To begin to address these questions a review of the literature on development and poverty was conducted to better understand the existing challenges in less economically developed countries with the additional specific focus on post-conflict countries. Through this review, concepts were raised by post-development theory that criticised development approaches and instead promoted that alternative approaches are required that focus on empowering countries. The concept of empowerment is applicable to approaches for all less economically developed countries, but even more significant for those that are post-conflict such as Timor-Leste. Therefore a comprehensive review on the context of Timor-Leste was also undertaken to understand its unique context and the role that agricultural commodities, specifically coffee, play in development on a national and household scale.

To address the first research question a participatory action research approach was used to explore a case study of coffee growers through household surveys conducted in the coffee growing district of Ermera in Timor-Leste. Household surveys gathered information on 778 coffee growers, pre and post coffee harvest. The results of these surveys were outlined
in the **Coffee, Poverty & Economic Development Report: Research Report 2013** that is attached as Appendix H and in the summary of key findings from the Timor-Leste Coffee and Poverty Project outlined in section 6.3 of Chapter Six. The report and summary provide a primarily socio-economic perspective on the coffee growing households of Ermera and outlines the heavy dependence of most households on coffee as the primary income source and the difficulties in welfare and food securities these households face.

Through conducting this case study with a participatory action research approach the second research question was explored more fully through this thesis. This was based on the experiences of using this approach in collaboration with the relevant literature. This thesis therefore contributes to the literature on participatory action research for cross-cultural collaborative capacity building and empowerment when conducting research in a post-conflict context. This thesis also contributes to the literature on post-development theory by showing how the use of participatory action research embeds empowerment into the research process. The aim to explore post-development theory as a guide for conducting collaborative research for ethical research in post-conflict, less economically developed countries was realised through the **Timor-Leste Coffee and Poverty Project**. McGregor (2007) comments that despite post-development theory seeming to lack practicality, the goals of post-development theory can be used in the field and not just to critique how development is undertaken, while McKinnon (2008) theorises that the role of post-development theory is to find new ways to undertake development.

Participatory action research is a methodology that combines theory, action and participation that challenges standard academic practices while still pursuing knowledge and organising ideas in the social sciences through techniques that combine knowledge and power (Fals-Borda, 1987). This thesis outlined research that used participatory action research which allowed for ethical engagement, promoted community based and participatory approaches and rejected traditional development practices that can be disempowering.

Participatory action research has strong value as a social process of collaborative learning that through its design shares power with people and gives a voice to their decision-making; research focused on participation and action is now essential for contexts where division exists (Balakrishnan & Claiborne, 2017) and for communities with experiences of disempowerment. These contexts align with the communities discussed in post-
development theory. The participatory action research process as explored in this thesis can be built into research projects, particularly in development contexts, so they are empowering to local communities and these countries as a whole.

Fals-Borda summarised his recommendations for researchers at a conference for sociologists in Atlanta:

“Do not monopolise your knowledge nor impose arrogantly your techniques but respect and combine your skills with the knowledge of the researched or grassroots communities, taking them as full partners and co-researchers. Do not trust elitist versions of history and science which respond to dominant interests, but be receptive to counter-narratives and try to recapture them. Do not depend solely on your culture to interpret facts, but recover local values, traits, beliefs, and arts for action by and with the research organisations. Do not impose your own ponderous scientific style for communicating results, but diffuse and share what you have learned together with the people, in a manner that is wholly understandable and even literary and pleasant, for science should not be necessarily a mystery nor a monopoly of experts and intellectuals” (Gott, 2008).

Researchers working in post-conflict, less economically developed countries face numerous challenges. To start to address these challenges it is essential for the researcher to understand their own thinking and how it fits in with potentially very different viewpoints and the environments of those being researched and the implications of these differences (Benatar, 2002). A research approach then needs to be selected, that can build empowerment opportunities into the process. A primary aim of participatory action research is “to give members of marginalised groups a voice, or to enable them to make their voices heard” (Bergold & Thomas, 2012). Therefore it is recommended from this research that participatory action research approaches that build in empowerment opportunities are used by researchers working in post-conflict less economically developed countries.

For Timor-Leste to move forward from its colonial history, greater importance needs to be focused on addressing capacity building needs and building empowerment opportunities into research approaches. As discussed by Shepherd (2009), the development industry came to Timor-Leste with an overwhelming presence after independence. With its history and current situation, it is important research is conducted collaboratively to ensure that
the disempowerment, that can arise from development and research strategies, does not add to the issues a post-conflict less economically developed country faces. It is essential to promote ‘bottom up’ approaches when trying to build in empowerment opportunities in cross-cultural research, especially in post-conflict countries (Brunnstrom, 2003). Participatory approaches are: “... about finding ways for the disempowered to develop confidence in their own voice, own abilities, and resources that could lead to their empowerment” (Angeles, 2005, p. 507). Understanding the concept of participatory action research and variations in cultural values has the potential to enable researchers to meet research requests from communities in more culturally appropriate ways; this can in turn result in better implementation and maintenance of programs (Westby & Hwa-Froelich, 2003). The conceptual model proposed in Chapter Six from this research would allow researchers working in this context to break down empowerment into the three targeted levels of individual, organisation and community and can guide the researcher and collaborators through the participatory action research process highlighting the themes and tools that they need to be aware of at each stage. The conceptual model also allows the researcher and collaborators to modify themes and tools throughout the process to be more specific to project and context needs if being used in a wider context.

7.3 Limitations and the role of post-development theory for researchers

There are numerous challenges facing researchers where an interdisciplinary approach is required to develop an understanding of complex issues in communities and to then respond with practical outcomes. These challenges multiply when the research is conducted in a post-conflict environment in a cross-cultural setting, as was experienced during the Timor-Leste Coffee and Poverty Project. Addressing the role of post-development theory for the researchers has been included in this limitations section as post-development theory does not offer much guidance to the researcher, rather it focuses on criticising and even rejecting the concept of development and development approaches as a whole. As a theory it is open to much criticism, however as a concept it can be used by the researcher to guide their own critical reflections on the methodological and personal choices they make when conducting research in communities in less economically developed countries. The concepts raised in post-development theory highlight the strengths that participatory action research can bring to development research by allowing opportunities for empowerment to be built into the process throughout each stage.
Limitations in the research process will always be experienced by researchers working in less economically developed countries, however, how these limitations are addressed is even more crucial in post-conflict countries. Communication limitations were experienced during the research process discussed in this thesis. Working in cross-cultural contexts often presents language and cultural barriers. While the researcher did attempt to address this through participating in Tetum language classes and conversing in Tetum for basic conversations it is acknowledged that misunderstandings would have occurred during the research process.

Short research trips rather than extended stays, as is promoted as desirable by ethnography, are also acknowledged as a limitation of this study. When the researcher was not in Timor-Leste, it was much more difficult to keep the research process engaged and communication between collaborators active. However, on-going communication was achieved with the project ‘champion’ and through the multiple research trips conducted, collaborators were still able to view the research team’s commitment to the project. It should however also be re-iterated that the researcher did spend over six months cumulatively in Timor-Leste immersing herself in the culture which also assisted in greater cultural awareness and the strengthening of the collaborative relationships.

Other limitations experienced during this project included the infrastructure limitations. Some household surveys were not possible to conduct due to poor road conditions. Training was often interrupted and planned technology to aid in training unusable with frequent power outages. While these were limitations, they also gave the researcher a better appreciation for the constant difficulties of working in Timor-Leste and therefore a greater understanding and respect for the Timorese collaborators.

7.4 Further research

Conducting the research for this thesis and within this, for the Timor-Leste Coffee and Poverty Project, there are a number of further research opportunities that have arisen. In regard to the case study of coffee growers there is the opportunity to pursue one of the original research directions of linking the household surveys to Geographic Information Systems to explore spatial relationships with the data. Further research opportunities also involve a follow-up project with the Timorese research team to link back with the Aldeia leaders that attended the community meeting in Gleno to discuss the Timor-Leste Coffee
and Poverty Project to discover what, if any, action took place from the information exchange that occurred. Further research could also use the conceptual model proposed to conduct a more detailed study into effective research approaches in Timor-Leste and test the effectiveness of the conceptual model for guiding research practices in this context.

7.5 Final reflection

Contributing to the Timor-Leste Coffee and Poverty Project, the corresponding research trips and the reflection process throughout, had a profound impact on myself both professionally and personally. A quote by Smith states that;

“Research in itself is a powerful intervention...which has traditionally benefited the researcher and the knowledge base of the dominant group in society. When undertaking research, either across cultures or within a minority culture, it is critical that researchers recognize the power dynamic which is embedded in the relationship with their subjects. Researchers are in receipt of privileged information...They have the potential to extend knowledge or to perpetuate ignorance” (Smith cited in Goulding et al., 2016, p. 791).

Through reading quotes such as this and the deeper reading throughout the literature on challenges in development contexts and research, I find it apparent that researchers have a duty to build empowerment opportunities into the research process where possible when working with communities, especially in post-conflict contexts.

While this thesis did not set out to focus on power dynamics, it was an important overarching theme in the process of empowerment and it was important to reflect on the concept of power over, power to and power with (Haugaard, 2012) while conducting this research in Timor-Leste as it is a
country with a long history of disempowerment through experiencing power over. By undertaking research using participatory action research as a means to build in empowerment opportunities the power dynamics could be focussed in a way to give power to, and to share power with, the people of Timor-Leste.

As a personal reflection, the challenge of learning to research and live in Timor-Leste was intense; witnessing extreme poverty, violence and death highlighted to me the privileged role of the researcher in a cross-cultural, post-conflict context, and the importance of breaking down barriers to collaborative approaches that can provide opportunities for empowerment where possible. To be trusted with the information and stories of the coffee growers and to work closely with, and again be trusted by, our Timorese collaborators was an honour and a privilege. I hope my attempt at sharing our story provides insights that contribute to cross-cultural research projects being conducted in more collaborative and empowering ways for all involved and that my attempt at words on paper reflects the respect and gratitude I felt during this project. I only ever wanted to do justice to the people we worked with and the country that was coming into its own. It is hoped that the research presented in this thesis does extend knowledge and that there will be opportunity for further collaborations with our colleagues in Timor-Leste.


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Hall, L. (2014). Developing an ethics of relational responsibility – locating the researcher within the research and allowing connection, encounter and collective concern to shape the intercultural research space. *Ethics and Education, 9*(3), 329-339. doi:10.1080/17449642.2014.946378


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Appendix A: Pilot survey
<table>
<thead>
<tr>
<th>Researcher’s Name(s):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
</tr>
<tr>
<td>Location (and map if village):</td>
</tr>
<tr>
<td>Name of Household Head:</td>
</tr>
</tbody>
</table>

### Section 1: Household Characteristics

1. **How many people live in the household?**
2. **How many rooms are there in the household?**
3. **Does your house have solid walls and roof?**
   - 1. Yes
   - 2. No
4. **Is there running water?**
   - 1. Yes
   - 2. No – where do you get running water from and how far away is it?
5. **What type of kitchen do you have?**
   - 1. Inside
   - 2. Outside
6. **What type of toilet do you have?**
   - 1. Inside
   - 2. Outside
7. Does anyone in the household own any of the following assets?
1. Car
2. Motorbike
3. TV
4. Radio
5. other electronic device
6. Farm equipment
7. Cattle (how many: _____)
8. Pigs
9. Chickens
10. Other livestock

Please complete the following table for each person who normally lives in this household

<table>
<thead>
<tr>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>List the first name of each household member</td>
<td>What is this person’s relationship with the household head?</td>
<td>Marital status</td>
<td>Sex</td>
<td>Year of birth</td>
</tr>
<tr>
<td>1. head</td>
<td>1. married</td>
<td>Male/Female</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. spouse/partner</td>
<td>2. living with partner</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. son/daughter</td>
<td>3. separated</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. son/daughter-in-law</td>
<td>4. divorced</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. grandchild</td>
<td>5. widowed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. parent</td>
<td>6. never married</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. parent-in-law</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. brother/sister</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. other relative</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. friend</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. other (please specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1
<table>
<thead>
<tr>
<th>Number of household member</th>
<th>Highest year/grade of schooling completed</th>
<th>Is this person still at school?</th>
<th>If not at school, but of school going age – why is he/she not at school?</th>
<th>Are any adult household members presently busy with training?</th>
<th>What language(s) does this person understand? (not at all; a little; average; well)</th>
<th>What language(s) can this person read/write? (not at all; a little; average; well)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Number of household member
1. Poor
2. Fair
3. Good
4. Very Good
5. Excellent

### How would you rate your general health
1. Poor
2. Fair
3. Good
4. Very Good
5. Excellent

### Have you had any major health problems in the past 12 months?
1. No
2. Yes (please specify condition(s))

### If you have had major health problems in the past 12 months, how long did that affect you?
1. Less than one week
2. 1 week – 1 month
3. 1-3 months
4. 3-6 months
5. 6 months +
### Section 2: Coffee Farming Activities

**Growing coffee**

<table>
<thead>
<tr>
<th>22. Where do you get your coffee to sell? (Please choose one option only).</th>
<th>A. Have your own section of land that you care for and harvest coffee cherries from.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a. How many coffee trees do you have on your land? __________</td>
</tr>
<tr>
<td></td>
<td>b. How many trees did you harvest from last season? __________</td>
</tr>
<tr>
<td></td>
<td>c. Do you have clear ownership of the land your trees are on? Yes/No</td>
</tr>
<tr>
<td></td>
<td>B. Work with others in your community to care for and harvest from a number of coffee trees together.</td>
</tr>
<tr>
<td></td>
<td>a. How many coffee trees does your community have in total? __________</td>
</tr>
<tr>
<td></td>
<td>b. How many households care for and harvest from these trees? __________</td>
</tr>
<tr>
<td></td>
<td>c. How many trees did your community harvest from last season? __________</td>
</tr>
<tr>
<td></td>
<td>d. How does the community allocate the cherries harvested and the money received from selling the coffee? ____________________________________________________________________________________________</td>
</tr>
<tr>
<td></td>
<td>C. Harvest coffee from trees that grow naturally in the bush around where you live.</td>
</tr>
<tr>
<td></td>
<td>a. Do you or any other people spend time during the year caring for the coffee trees that grow in your area (e.g. pruning, other)? Yes/No</td>
</tr>
<tr>
<td></td>
<td>b. How many trees did you harvest from last season? __________</td>
</tr>
<tr>
<td></td>
<td>c. What is the furthest distance you walk from your home to harvest coffee? 0-2km / 2-5km / 5-10km / more than 10km</td>
</tr>
<tr>
<td>Question</td>
<td>Options</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 23. When you harvest your coffee, do you sell it to the buyer as cherry or processed bean? | 1. Cherry  
2. Parchment  
3. Processed bean  
4. Both |
| 24. Do you own or have access to a pulping machine?                      | 1. Own the machine – please answer the questions below  
   a. How did you get to own the machine? Donated/bought/other  
   b. Do you use the machine? Yes/No – why not?  
2. Have access  
3. Neither |
| 25. Can you estimate how many kg of coffee you sold to buyer(s) in the past season? | Bean Kg?  
Cherry Kg? |
| 26. In the last coffee season, who did you sell most of your product to (i.e. which coffee company, or a middle man)? | 1. CCT  
2. Other company  
3. Middleman  
4. Other (specify) |
| 27. Did the buyers come to where you live to buy it, or did you have to travel to a place to sell it? | 1. Came to me – please answer:  
2. Had to travel to sell  
   a. How far did you have to travel?  
   b. How long did it take to travel there?  
   c. How did you get there? |
| 28. What was the typical price were paid for your cherry/bean?            | Average price ____ $/Kg  
Lowest price ____ $/Kg  
Highest price ____ $/Kg |
29. How did the buyer assess the quality of your product?

30. What quality was most of your product assessed as?
   1. Poor
   2. Medium
   3. Good
   4. Excellent

31. Did you think the buyer’s assessment of your coffee quality was fair?
   1. Yes
   2. No

32. Did you have some product that you were unable to sell because it was rejected?
   1. Yes – how often did that happen? _________________
   2. No

33. What proportion of your product were you unable to sell over the season?
   1. less than 5%
   2. 5%-10%
   3. 11%-20%
   4. 21%-50%
   5. 51%-70%
   6. more than 70%
   7. Why were you unable to sell this product? _________________

Other coffee farming activities

34. Over the past 4 years have you had any education and training on coffee production, care for your land or any other activities related to coffee production?
   1. Yes
      a. Who ran the training? _________________
      b. What was the training about? _________________
      c. How many hours did each course involve? ____________
   2. No

35. Did you change any of your practices for caring for or harvesting your coffee as a result of your training?
   1. Yes – please specify practices changed: _________________
   2. No
### Section 3: Income and Expenditure

**Income / Expenditure**

<table>
<thead>
<tr>
<th>37. In the past season, can you estimate what your total income from sales of coffee was for the whole season?</th>
<th>$ _________</th>
</tr>
</thead>
</table>

39. What other cash income have you received in the past four weeks (apart from coffee)?

Specify the source and amount of that income:

- 1. Selling Vegetables, Crafts or Animals
  - a. Please specify ________________________________
  - b. Income amount: $________________
- 2. Government transfers: $________________
- 3. Money sent from relatives: $_______________
- 4. Paid employment: $_______________
- 5. Other source:
  - a. Please specify the source, ____________ and
  - b. Amount of that income: $________________

40. When you received income from selling coffee in the past season, what were the main things you spent that income on?

Can you estimate the amounts spent in the following categories:

- 1. Food and other daily essentials $______________
- 2. Clothing $______________
- 3. Materials or items for house $______________
- 4. Paying for transport $______________
- 5. Sent to relatives $______________
- 6. Special occasions/celebrations $______________
- 7. Money not spent (saved) $______________
- 8. Other (specify any major items: ________________________________)
41. We now want to ask about your cash income (not from coffee) that you received in the past four weeks.

When you received this income, what were the main things you spent that income on?

Can you estimate the amounts spent in the following categories:

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Food and other daily essentials</td>
<td></td>
</tr>
<tr>
<td>2. Clothing</td>
<td></td>
</tr>
<tr>
<td>3. Materials or items for house</td>
<td></td>
</tr>
<tr>
<td>4. Paying for transport</td>
<td></td>
</tr>
<tr>
<td>5. Sent to relatives</td>
<td></td>
</tr>
<tr>
<td>6. Special occasions/celebrations</td>
<td></td>
</tr>
<tr>
<td>7. Money not spent (saved)</td>
<td></td>
</tr>
<tr>
<td>8. Other (specify any major items:)</td>
<td></td>
</tr>
</tbody>
</table>
Appendix B: Key findings from pilot study
Contribution of Coffee to Timor-Leste Households
2009 Pilot Study Findings
Background

The majority of rural people in the developing world are subject to severe poverty and inequality and Timor-Leste is no exception. Timor-Leste is one of the world’s newest nations, achieving independence in 2002; it is also one of the poorest. At independence the estimated annual income was just US$431 per capita.

For a small country with a population of approximately one million, coffee contributes significantly at both national and individual levels. Excluding hydrocarbon resources, coffee accounts for over 90% of export earnings. Agriculture as a whole employs about 90% of the population and the coffee production industry provides at least partial support for 45 000 families and, for at least 25 000 of these families, it is their sole income.

Coffee also contributes to nature conservation in Timor-Leste as it is grown in association with rainforest and shade species that provide habitat for a variety of species. Remnant cover is very important for conservation in Timor-Leste as through isolation a high level of endemism has arisen which includes 1500 plants, 262 birds’ and 127 mammals. The forested area of this nation is 1.4 million hectares, with 350 000 hectares of this threatened from degradation; this makes agroforestry a good alternative to slash and burn cultivation as farmers can produce forest trees for firewood and domestic use, cash crops and fodder for livestock while preserving and contributing to conservation.

Our Aim

In 2009 Southern Cross University in collaboration with Monash University worked together with staff and students at the East Timor Coffee Academy (ETICA). A pilot study was conducted that aimed to determine the social and economic impacts of existing coffee production processes and market access on household incomes in Timor-Leste.

Additionally, we aimed to answer the question:

‘Does certified coffee have the capacity to alleviate poverty?’

What We Did & How We Did It

In August 2009 researchers from Southern Cross University travelled to Timor-Leste for a month of research and worked with the Timorese research team from ETICA. The ETICA research team underwent a training day on research methodology and survey technique and then conducted the household surveys as part of an ongoing capacity building project. Three hundred and twenty-eight household level surveys were conducted across the two coffee growing districts of Ermera and Ainaro.

In this pilot study we obtained information on living conditions, education and health levels, household assets, forms of income, coffee production activities, coffee prices and the expenditures of coffee producer households.
Who We Spoke To

During August we also conducted 12 interviews with key informants to compliment the information we obtained from the surveys. These included people from Cooperativa Café Timor such as the Enterprise Development Advisor and Agribusiness Advisors, as well as government ministers including the Minister for Agriculture and the Minister for Environment. People from aid agencies, the National University of East Timor and ETICA were also asked for information and to share their opinions.

Key Findings

Demographics

- Households had an average of six people to support
- In terms of livestock, the majority of households reported owning cattle, pigs and chickens (70%, 63% and 64% respectively)
- Over 60% of households did not own a radio. Radios are important as they are a major channel for the communication of information. Additionally they are important due to the high illiteracy rates
- 28% of household members spoke Portuguese, 44% spoke Bahasa Indonesia and 6% spoke English
- On average, those who spoke English had the highest incomes, followed by Portuguese speakers and then Bahasa Indonesian speakers

<table>
<thead>
<tr>
<th>Language</th>
<th>Total Income</th>
<th>Coffee Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>US$1226</td>
<td>US$480</td>
</tr>
<tr>
<td>Portuguese</td>
<td>US$780</td>
<td>US$480</td>
</tr>
<tr>
<td>Indonesian</td>
<td>US$600</td>
<td>US$400</td>
</tr>
</tbody>
</table>

- 15% of school age children were getting no education
- Children with no education came from lower income families
Importance of Coffee

- Coffee was the main source of household income, making up an average of 94% of a household’s total income.
- 46% of households relied solely on coffee for 100% of their income.
- Total annual income for households was US$420.
- Poverty line is set at US$0.55 per capita per day; 78% of household members were living below the poverty line.

“...the key to the rehabilitation project will be flexibility and communication; most importantly creating an understanding of the importance of planning for the future.”

Agribusiness Advisor, CCT

How Coffee is Marketed

- Coffee is sold in different forms. The forms investigated in this study were cherry and parchment.
- Price for coffee cherry ranged from US$0.15/kg – US$0.58/kg. The average price was US$0.30/kg.
- Price for coffee parchment ranged from US$0.25/kg – US$1.50/kg. The average price was US$1.30/kg.
- Processing into parchment is potentially a value-adding opportunity if done correctly and with quality controls.
- Most households sold coffee as only cherry (46%); 20% sold only parchment.
- Producers sell either coffee cherry, mainly to CCT, or process into parchment to sell to a variety of buyers including Chinese traders, agriculture service centres, Timor Corp and Timor Global.
- Income from this study was not dependent on the buyer of the coffee.

Coffee Activities

- Average of five people maintain/harvest from the coffee trees per household.
- The average percentage of trees producers harvested from was 90%.
- 94% of households claimed to attend to the land (the extent of the maintenance is debatable however).
- 95% of coffee is sold by roadside or farm-gate.
- To transport coffee to sell:
  - 65% walked and carried it.
  - 30% loaded it onto horses.
  - 5% transported it by car.
- CCT has a rehabilitation project; however it is heavily subsidised, not efficient and very costly – therefore next step is to get farmers producing their own seedlings.
- Only 4% of producers had received training in agricultural and coffee practices.
Processing Considerations

- Producers who sold cherry received only 38% of the total coffee income that those who sold parchment received.
- It is parchment rather than cherry that is usually associated with having poor quality.
- Cherry quality is easily assessed by observation.
- Parchment quality is more difficult – can be assessed by visual inspection, and moisture content by biting the bean or by using a moisture metre, though ultimately it is by final taste of cup.
- When producers process coffee themselves, they are able to sell their coffee in small amounts, as they require cash (i.e. school fees, food etc). In this way parchment can act as a bank account.
- Cherry must be sold/processed within 12 hours to prevent fermentation.
- Selling cherry results in producers receiving most of their yearly cash income in a very short period, meaning that less cash is available at other times of the year.

Some Important Points

- Timor-Leste has excellent quality coffee cherries.
- Cherry taken to the roadside to sell, that isn’t sold, starts to deteriorate, and producers eventually take it home to dry-process it themselves – which can result in low quality parchment.
- Capacity building and extension activities for coffee producers are necessary to ensure quality and market access.
- Diversification programs and the implementation of complementary agroforestry products will also be necessary, as coffee alone as it is currently produced, will not be the answer to alleviating the poverty experienced by coffee producers in Timor-Leste.
- CCT coffee is fair trade and organic certified – yet producers who sold to CCT did not have significantly higher incomes than those who sold to other buyers.
- Fair Trade certification has not provided the miracle solution to alleviate the country’s development issues.

Contacts

For further information regarding this pilot study or the AusAID supported collaborate project Treasure Maps being conducted by Southern Cross University and Monash University, contact: Dr David Lloyd (david.lloyd@scu.edu.au)
Appendix C: Project plan handout
Synopsis

This project aims to examine the economic and social impacts of the coffee industry in Timor-Leste. It will look at the economic and social well-being of coffee growing households and coffee growing districts. Focus will be on using the combined economic and GIS capability of the two Universities to examine the structural and spatial factors that affect the capacity, of those making a living from coffee growing, to move out of poverty and to manage natural resource and environmental threats.

Research Questions

• What geographic and economic factors contribute to differences in yield and income to coffee growing households, and what kinds of interventions or industry structures can be most effective in improving yield and income to poor producers?
• How reliant on the incomes from coffee are poor producers, and how does this income contribute to household welfare – especially that of women and children (nutrition, health, education) – and other income-building activities?
• How does volatility in production and price affect the welfare of poor producers, and what means are available to protect against these effects?
• What is the extent of coffee plantations, the extent of cover of coffee shade trees and what are the environmental hazards in coffee growing areas?

Summary of Significance of Research

Timor-Leste is one of the world’s poorest nations, with around 76% living in rural settings, and with a history of violence and oppression. There is virtually no modern economic activity, especially outside Dili. One of the greatest development challenges for Timor-Leste is finding broad-based ways of addressing basic needs and helping people make the first steps towards moving out of poverty. It is this background that motivates an interest in coffee growing households and districts.

Research into the economics of the coffee industry has largely centred around global supply and price transmission mechanisms. A particular point of interest has been the relatively low and declining share of returns that are received by the producers.

An important dimension of any analysis of rural production and livelihoods is the spatial dimension. Household welfare will be affected by the spatial characteristics of the household’s location – for example distance from services, and opportunities for alternative employment or training. What is needed to investigate this is detailed geographical information systems (GIS) data.

We are seeking to fill the existing information gap using remotely sensed land use data. It can be used to map factors influencing and contributing to environmental degradation such as vegetation cover, soil characteristics and human activities.

A significant contribution of this project will be the innovative use of a rich confluence of GIS, household survey and existing institutional data for modeling, planning and forming policy.
GIS & Remote Sensing data will be used to quantify key spatial factors that might explain variations in income of coffee producing households and differences in household welfare. It will also highlight areas of erosion risk and map current land use patterns.

Our Plan

Based on a pilot study conducted in 2009 that surveyed coffee households, we are now planning a larger survey of households and plan to overlay this with satellite imagery and GIS data to look at land capability assessments and forest innovations. This will map erosion hazard, forest cover, coffee plantations and match soils, aspect and elevation with suitable species to grow.

Surveys

We propose an extensive household survey of coffee growing households and other households in coffee growing districts, numbering around 500. We plan to survey each household twice, with six months between surveys; one round occurring during coffee harvest time when households are receiving good income flows, and the other in the off-season where households are receiving no income from coffee.

GIS & Remote Sensing

Data will include information on actual and potential land use, altitude, water resources, as well as existing settlements, roads and other services (schooling, health services, markets etc). This data collection can be implemented by using Geoinformatics (Remote Sensing, GPS, GIS) to collect, manipulate and analyse the necessary data.

Standard land classifications will be used and taken into account such as water catchment, access to roads and settlements, vegetation cover and steepness of terrain.

Project Team

Monash University
Prof Brett Inder
Dr Kathryn Cornwell

Southern Cross University
Dr David Lloyd
Dr Sumith Pathirana
Dr Kristin den Exter
Ms Kerrie Stimpson
Mr Greg Luker

Contact
For further information regarding the pilot study or this AusAID supported collaborative project contact: Dr David Lloyd (david.lloyd@scu.edu.au)
Appendix D: GIS training
In 2010, Prof Bret Inder from Monash University and Dr David Lloyd from Southern Cross University were awarded $356K funding over three year by AusAid ADRA (research) group to examine the economic and social well being of coffee growing households and coffee growing district in Timor-Leste. A major focus is on combining the economic, environmental management and GIS capability of the two Universities to examine the structural and spatial factors that affect the capacity of those making a living from coffee growing, to move out of poverty and to manage natural resource and environmental threats.

Research Questions
What geographic and economic factors contribute to differences in yield and income to coffee growing households, and what kinds of interventions or industry structures can be most effective in improving yield and income to poor producers?

How reliant on the incomes from coffee are poor producers, and how does this income contribute to household welfare – especially that of women and children (nutrition, health, education) – and other income-building activities?

How does volatility in production and price affect the welfare of poor households?
GEOSPATIAL AND GLOBAL POSITIONING SYSTEMS WORKSHOPS

During November 2010 two geospatial workshops were conducted in Dili, Timor Leste by the team from Southern Cross University. Led by Dr Sumith Pathirana and Dr Kristin den Exter and supported by Ines Almeida, Dr David Lloyd and Kerrie Stimpson. Eleven participants attended the first, a five day training workshop in geospatial data handling and analysis while fifteen were provided fundamental training in the use of GPS.

The first workshop was conducted at the East Timor Development Agency (EDTA) from the 9-16th November, 2010. Of the eleven participants, eight were from ALGIS (Department of Agriculture) and three were from the University of Timor Leste (UNTL).

The second workshop, attended by fifteen participants, was a one day introductory course in how to use Global Positioning Systems and was held at the Ministry of Agriculture on the 18th November 2010. Considerable effort was made during these workshops to cross language barriers, and the help of translators was essential to the success of both courses. Our post training survey showed that only 23% participants spoke some English. The majority of participants spoke Tetun (96%), with Bahasa (88%) and Portuguese (15%) also spoken to varying degrees.

The survey also showed that few participants had prior experience of GIS, with 84% of respondents indicating they had not used GIS before, 15% had prior experience, with 1 participant not responding to this question. Participants had slightly more experience with the use of GPS with 27% of respondents indicating they had used GPS in the past.

Eighty-eight percent of respondents indicated they would like more training (3 participants did not respond to this question). Qualitative responses indicate that 23% would like more training in remote sensing; 38% would like more training in GIS; 35% would like more training in GPS; 19% would like more training in spatial analysis; 12% in data transfer and 8% in making maps. The training received a high score in the evaluations with an average score of 4.6 out of a possible 5 in response to question “overall I am satisfied” with the experience of the training. In light of the success of both workshops and the responses to these surveys the team is now investigating further training opportunities for public servants and Academics in Dili.
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Faucibus semper id vivamus justo vel aliquam. Egestas curabitur sit justo, placerat elit risus velit orci vitae velit, orci curabitur amet recusandae ullamcorper. Quam nascetur fringilla quisque adipiscing porta, in nullam pharetra suspendisse, tincidunt dictumst varius.

Quisque vitae lorem

Id, ipsum cras bibendum eu arcu faucibus. Pellentesque soluta eget, mauris gravida nulla erat imperdiet tincidunt est, purus cursus aliquam eget sociis ac quis, amet lobortis dui amet. Amet quis habitasse vestibulum ipsum a suscipit, donec lectus turpis hendrerit integer laoreet. Feugiat dolor elit pede et wisi, posuere vel class fringilla. Ipsum tellus molestie lorem imperdiet consectetuer. Quam in donec, integer faucibus euismod wisi, tempor odio etiam consectetuer libero non, proin arcu. Eget lacus, lectus mauris massa sed volutpat. Morbi non amet nunc, suscipit mauris quisquam fusce vestibulum, id per nisl, auctor libero, phasellus mauris ipsum. Litora lacinia sed ipsum.

Montes et metus adipiscing


Ipsum tellus molestie


In et aptent posuere sapien


Leo vitae diam est luctu

Vitae sodales et ut facilisis dignissim, imperdiet in diam, quisque adipiscing nec posuere feugiat ante velit. Vivamus leo quisque. Neque mi vitae, nulla cras diam fusce lacus, nibh pellentesque libero. Dolor at venenatis in, ac in quam purus diam
Appendix E: Household Survey Round 1
### Section 1: Household Characteristics

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 How many people are in the household?</td>
<td>_____ people</td>
</tr>
<tr>
<td>1.2 How many rooms are there in your dwelling?</td>
<td>_____ rooms</td>
</tr>
</tbody>
</table>
| 1.3 What is the main material of the external walls of your dwelling?   | 1. Concrete, brick  
2. Corrugated iron, tin  
3. Bebak (palm tree fronds), bamboo, rattan, wood  
4. Mud, clay  
5. Other – please specify:  |
| 1.4 What is the main source of water for bathing and washing for your household? | 1. Private tap/connection to pipeline  
2. Private pump  
3. Private well  
4. Public taps/standpipe  
5. Public well  
6. Spring  
7. River, stream, lake, pond  
8. Rainwater  
9. Other – please specify:  |
| 1.5 What is the main source of lighting in your dwelling?                | 1. Electricity  
2. Privately generated electricity  
3. Petromax (ker pressure lantern)  
4. Lamp  
5. Candles or battery torch/flashlight  
6. Other – please specify:  |
| 1.6 What type of toilet does your household use?                         | 1. Private flush toilet  
2. Public/shared flush toilet  
3. Private traditional latrine  
4. Public/shared traditional latrine  
5. Bowl/bucket  
6. No toilet (go in the bush)  
7. Other – please specify:  |
| 1.7 Which, if any, of the following assets are owned by a member of the household? | 1. Car  
2. Motorbike  
3. TV  
4. Radio  
5. Mobile phone  
6. Farm equipment (e.g. machinery, working animals)  
7. Livestock  
   a. Cattle – how many?  
   b. Pigs – how many?  
   c. Chickens – how many?  
   d. Goats – how many?  |
<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.8 How long does it take to walk from your house to the closest suco centre?</td>
<td>_____ hour(s) _____ minutes</td>
</tr>
<tr>
<td>1.9 How long does it take to walk from your house to the nearest vehicle passable road?</td>
<td>_____ hour(s) _____ minutes</td>
</tr>
<tr>
<td>1.10 For how many years has your household lived in this area?</td>
<td>_____ year(s)</td>
</tr>
</tbody>
</table>
Please complete the following table for EACH PERSON WHO NORMALLY LIVES IN THE HOUSEHOLD

<table>
<thead>
<tr>
<th>Name of household member</th>
<th>Relationship to household member</th>
<th>Age</th>
<th>Marital status</th>
<th>Sex</th>
<th>For each language*, which of the following statements is most accurate?</th>
<th>What is this person’s main occupation?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. _______________________</td>
<td>Parent</td>
<td>_____ years</td>
<td>Please circle</td>
<td>1. Married</td>
<td>1. Farmer/farm labourer</td>
<td>1. Farmer/farm labourer</td>
</tr>
<tr>
<td>__________________________</td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>__________________________</td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. _______________________</td>
<td>Parent</td>
<td>_____ years</td>
<td>Please circle</td>
<td>1. Married</td>
<td>3. Trader</td>
<td>3. Trader</td>
</tr>
<tr>
<td>__________________________</td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. _______________________</td>
<td>Parent</td>
<td>_____ years</td>
<td>Please circle</td>
<td>1. Married</td>
<td>4. Skilled worker</td>
<td>4. Skilled worker</td>
</tr>
<tr>
<td>__________________________</td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. _______________________</td>
<td>Parent</td>
<td>_____ years</td>
<td>Please circle</td>
<td>1. Married</td>
<td>5. Teacher</td>
<td>5. Teacher</td>
</tr>
<tr>
<td>__________________________</td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>__________________________</td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>__________________________</td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. _______________________</td>
<td>Parent</td>
<td>_____ years</td>
<td>Please circle</td>
<td>1. Married</td>
<td>8. Student</td>
<td>8. Student</td>
</tr>
<tr>
<td>__________________________</td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>__________________________</td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>_________________________</td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

* Tetun, Indonesian, Portuguese, English

<table>
<thead>
<tr>
<th>Tetun:</th>
<th>Indonesian:</th>
<th>Portuguese:</th>
<th>English:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Please complete the following table for EACH PERSON WHO NORMALLY LIVES IN THE HOUSEHOLD
<table>
<thead>
<tr>
<th>Name of household member</th>
<th>Relationship to household mother</th>
<th>Age</th>
<th>Marital status</th>
<th>Sex</th>
<th>For each language*, which of the following statements is most accurate?</th>
<th>What is this person’s main occupation?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Household mother</td>
<td></td>
<td></td>
<td>1. Married</td>
<td>1. Male</td>
<td>1. This person speaks [language] most or all of the time.</td>
<td>1. Farmer/farm labourer</td>
</tr>
<tr>
<td>2. Husband/partner</td>
<td></td>
<td></td>
<td>2. Living with partner</td>
<td>2. Female</td>
<td>2. This person can carry out a 15 minute conversation in [language].</td>
<td>2. Non-farm labourer</td>
</tr>
<tr>
<td>3. Son/daughter/-in-law</td>
<td>(including adopted or step sons/daughters)</td>
<td></td>
<td>3. Separated</td>
<td></td>
<td>3. This person can speak a few sentences of [language].</td>
<td>3. Trader</td>
</tr>
<tr>
<td>4. Niece/nephew</td>
<td></td>
<td></td>
<td>4. Divorced</td>
<td></td>
<td>4. This person can speak a few words of [language].</td>
<td>4. Skilled worker</td>
</tr>
<tr>
<td>5. Grandchild</td>
<td></td>
<td></td>
<td>5. Widowed</td>
<td></td>
<td>5. This person cannot speak [language].</td>
<td>5. Teacher</td>
</tr>
<tr>
<td>7. Sister/brother/in-law</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7. Housewife</td>
</tr>
<tr>
<td>8. Grandfather/grandmother</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8. Student</td>
</tr>
<tr>
<td>10. Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10. Below school-age child</td>
</tr>
</tbody>
</table>

* Tetun, Indonesian, Portuguese, English

| 5. _________ | 1 2 3 4 5 6 7 8 9 |   years | 1 2 3 4 5 6 | 1 2 | Tetun: 1 2 3 4 5 | 1 2 3 4 5 |
| 6. _________ | 1 2 3 4 5 6 7 8 9 |   years | 1 2 3 4 5 6 | 1 2 | Indonesian: 1 2 3 4 5 | 6 7 8 9 10 |
| 7. _________ | 1 2 3 4 5 6 7 8 9 |   years | 1 2 3 4 5 6 | 1 2 | Portuguese: 1 2 3 4 5 | 1 2 3 4 5 |
| 8. _________ | 1 2 3 4 5 6 7 8 9 |   years | 1 2 3 4 5 6 | 1 2 | English: 1 2 3 4 5 | 1 2 3 4 5 |

10 – please specify:
**Section 2: Consumption**

Please answer each question in relation to THE LAST 4 WEEKS

| 2.1 On average, how many meals per day did the members of your household eat? | 1. 0 meals  
2. 1 small meal  
3. 1 large meal (until full/satisfied)  
4. 2 small meals  
5. 2 large meals  
6. 3 small meals  
7. 3 large meals  
8. Other – please specify: __________________________ |
| --- | --- |

| 2.2 On average, how many days per week did the members of your household consume the following foods? | Please circle for each food group  
1. Rice/cereals:  
2. Legumes/nuts:  
3. Eggs/milk products:  
4. Fish:  
5. Meat:  
6. Vegetables:  
7. Fruit:  
8. Fats/oils/butter:  
9. Sweets/cakes/biscuits:  
10. Soft drink/alcohol:  |
| --- | --- |

| 2.3 Which, if any, members of your household consumed a lot more than the average member? (See codes in q 1.11 – 1.16) | 1. Member(s): __________________________  
2. None |
| --- | --- |

| 2.4 Which, if any, members of your household consumed a lot less than the average member? (See codes in q 1.11 – 1.16) | 1. Member(s): __________________________  
2. None |
| --- | --- |

| 2.5 Of the total amount of food that your household consumed, what proportion was: | Using the stones, please indicate on bar chart 1  
1. Purchased by your household? ___ stones  
2. Grown by your household? ___ stones  
3. Collected from the wild/caught by your household? ___ stones |
| --- | --- |

| 2.6 From where/whom did your household buy most of its food? | 1. Aldeia market/local market  
2. Friends/neighbours  
3. Passing sellers/roadside stalls  
4. Main towns  
5. Other – please specify: __________________________ |
| --- | --- |

<table>
<thead>
<tr>
<th>2.7 What was the average price of rice?</th>
<th>_______ USD</th>
</tr>
</thead>
</table>

| 2.8 Did your household give food to other households that did not have enough food to eat? | 1. Yes, mainly to family members in other households  
2. Yes, mainly to friends and neighbours  
3. Yes, to whomever needs it  
4. No  
5. Other – please specify: __________________________ |
| --- | --- |

| 2.9 Did your household receive food from other households if your household did not have enough food to eat? | 1. Yes, mainly from family members in other households  
2. Yes, mainly from friends and neighbours  
3. Yes, from whomever has it  
4. No  
5. Other – please specify: __________________________ |
**Please answer each question in relation to WHEN YOUR HOUSEHOLD’S MONTHLY INCOME IS HIGHEST**

<table>
<thead>
<tr>
<th>2.10 When is your household’s monthly income highest?</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Please indicate on the timeline.</em></td>
</tr>
<tr>
<td><strong>Please circle response</strong></td>
</tr>
<tr>
<td>January February March April May June July</td>
</tr>
<tr>
<td>August September October November December</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2.11 On average, how many meals per day did the members of your household eat?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 0 meals</td>
</tr>
<tr>
<td>2. 1 small meal</td>
</tr>
<tr>
<td>3. 1 large meal (until full/satisfied)</td>
</tr>
<tr>
<td>4. 2 small meals</td>
</tr>
<tr>
<td>5. 2 large meals</td>
</tr>
<tr>
<td>6. 3 small meals</td>
</tr>
<tr>
<td>7. 3 large meals</td>
</tr>
<tr>
<td>8. Other – please specify:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2.12 On average, how many days per week did the members of your household consume the following foods?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Please circle for each food group</strong></td>
</tr>
<tr>
<td>1. Rice/cereals: 1 2 3 4 5 6 7 days</td>
</tr>
<tr>
<td>2. Legumes/nuts: 1 2 3 4 5 6 7 days</td>
</tr>
<tr>
<td>3. Eggs/milk products: 1 2 3 4 5 6 7 days</td>
</tr>
<tr>
<td>4. Fish: 1 2 3 4 5 6 7 days</td>
</tr>
<tr>
<td>5. Meat: 1 2 3 4 5 6 7 days</td>
</tr>
<tr>
<td>6. Vegetables: 1 2 3 4 5 6 7 days</td>
</tr>
<tr>
<td>7. Fruit: 1 2 3 4 5 6 7 days</td>
</tr>
<tr>
<td>8. Fats/oils/butter: 1 2 3 4 5 6 7 days</td>
</tr>
<tr>
<td>9. Sweets/cakes/biscuits: 1 2 3 4 5 6 7 days</td>
</tr>
<tr>
<td>10. Soft drink/alcohol: 1 2 3 4 5 6 7 days</td>
</tr>
</tbody>
</table>
Section 3: Income and consumption smoothing

Please complete the following table with respect to your household’s COFFEE income AFTER THE END OF THE LAST HARVEST.
If your household sold all of its coffee during the harvest period, please leave the table blank.

<table>
<thead>
<tr>
<th>3.1 When did your household earn this income? Please indicate on this timeline</th>
<th>Please circle response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cherry</td>
<td></td>
</tr>
<tr>
<td>2. Parchment</td>
<td></td>
</tr>
<tr>
<td>3. Processed bean</td>
<td></td>
</tr>
<tr>
<td>4. All of the above</td>
<td></td>
</tr>
<tr>
<td>5. Please specify: ________________</td>
<td></td>
</tr>
</tbody>
</table>

| 3.2 Which household member(s) earned this income? (See codes in q 1.11 – 1.16) | Member(S)__________________________ |
| 3.3 How much income did your household earn? | ______ USD |
| 3.4 In what form did your household sell the coffee? | 1. Cherry |
| 2. Parchment |
| 3. Processed bean |
| 4. All of the above |
| 5. Please specify: ________________ |

| 3.5 Who did your household sell most of the coffee? | 1. CCT |
| 2. A company other than CCT |
| 3. A middle-man |
| 4. Other – please specify: ________________ |

| 3.6 Did the buyers come to your household to buy the coffee, or did you have to travel somewhere to sell it? | 1. Came to household |
| 2. Had to travel |
| a. How far did you travel? _____kms |
| b. How long did it take you to travel there? _____days _____hours _____ minutes |
| c. How did you get there? ________________ |

| 3.7 How many kilograms of coffee did your household sell? | ______kgs |

| 3.8 With respect to the prices your household received for the coffee, what was the: i) Lowest price? _____$/kgs |
| 3.9 What were the top three things that your household spent the coffee income on? | 1. Food and other daily essentials |
| 2. Durable goods |
| 3. Items for the house or farm |
| 4. Transport costs |
| 5. Repaying loans |
| 6. Special occasions or celebrations (weddings, funerals) |
| 7. Sent to relatives |
| 8. Some money not spent (saved) |
| 9. Other – please specify: ________________ |

| 3.10 Would your household prefer to receive this income in staggered payments over time? | 1. Yes – why? ________________ |
| 2. No – Why? ________________ |
Please complete the following table with respect to each of your household’s OTHER SOURCES OF INCOME (i.e. other than coffee) AFTER THE END OF THE LAST HARVEST.
For example, income from:
• selling crops – please fill out the table for each crop separately
• selling livestock – please fill out the table for each type of animal sold
• farm labour
• non-farm work – please specify the type of work
• remittances from family/friends
• government transfers

<table>
<thead>
<tr>
<th>Income source</th>
<th>3.11</th>
<th>3.12</th>
<th>3.13</th>
<th>3.14</th>
<th>3.15</th>
<th>3.16</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>When did your household earn this income?</td>
<td>Which household member(s) earned this income?</td>
<td>How much income did your household earn from this activity?</td>
<td>If this income was from selling a crop:</td>
<td>If this income was from selling livestock:</td>
<td>What were the top three things that your household spent this income on?</td>
</tr>
</tbody>
</table>

1. Please circle 1 2 3 4 5 6 7 8 9 – please specify: ______________
2. Please circle 1 2 3 4 5 6 7 8 9 – please specify: ______________
3. Please circle 1 2 3 4 5 6 7 8 9 – please specify: ______________

i) How many kgs/bags of the crop were sold?
ii) What was the average price received per kg/bag?

i) How many animals were sold?
ii) What was the average price received per animal?

1. Food and other daily essentials
2. Durable goods
3. Items for the house or farm
4. Transport costs
5. Repaying loans
6. Special occasions or celebrations (weddings, funerals)
7. Sent to relatives
8. Some money not spent (saved)
9. Other
<table>
<thead>
<tr>
<th>Income source</th>
<th>3.11 When did your household earn this income?</th>
<th>3.12 Which household member(s) earned this income? (See codes in q 1.11 – 1.16)</th>
<th>3.13 How much income did your household earn from this activity?</th>
<th>3.14 If this income was from selling a crop: i) How many kgs/bags of the crop were sold? ii) What was the average price received per kg/bag?</th>
<th>3.15 If this income was from selling livestock: i) How many animals were sold? ii) What was the average price received per animal?</th>
<th>3.16 What were the top three things that your household spent this income on?</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. __________</td>
<td>1 2 3 4 5 6 7</td>
<td>Member(s): ______ USD or ______ USD Goods: ______ Value: ______ USD</td>
<td>i) ___ kgs/bags ii) ___ USD</td>
<td>i) ___ animal ii) ___ USD</td>
<td>1 2 3 4 5 6 7 8 9 – please specify: ___________________________</td>
<td></td>
</tr>
<tr>
<td>5. __________</td>
<td>1 2 3 4 5 6 7</td>
<td>Member(s): ______ USD or ______ USD Goods: ______ Value: ______ USD</td>
<td>i) ___ kgs/bags ii) ___ USD</td>
<td>i) ___ animal ii) ___ USD</td>
<td>1 2 3 4 5 6 7 8 9 – please specify: ___________________________</td>
<td></td>
</tr>
<tr>
<td>6. __________</td>
<td>1 2 3 4 5 6 7</td>
<td>Member(s): ______ USD or ______ USD Goods: ______ Value: ______ USD</td>
<td>i) ___ kgs/bags ii) ___ USD</td>
<td>i) ___ animal ii) ___ USD</td>
<td>1 2 3 4 5 6 7 8 9 – please specify: ___________________________</td>
<td></td>
</tr>
<tr>
<td>7. __________</td>
<td>1 2 3 4 5 6 7</td>
<td>Member(s): ______ USD or ______ USD Goods: ______ Value: ______ USD</td>
<td>i) ___ kgs/bags ii) ___ USD</td>
<td>i) ___ animal ii) ___ USD</td>
<td>1 2 3 4 5 6 7 8 9 – please specify: ___________________________</td>
<td></td>
</tr>
<tr>
<td>8. __________</td>
<td>1 2 3 4 5 6 7</td>
<td>Member(s): ______ USD or ______ USD Goods: ______ Value: ______ USD</td>
<td>i) ___ kgs/bags ii) ___ USD</td>
<td>i) ___ animal ii) ___ USD</td>
<td>1 2 3 4 5 6 7 8 9 – please specify: ___________________________</td>
<td></td>
</tr>
</tbody>
</table>
Please answer each question in relation to the time AFTER THE END OF THE LAST HARVEST.

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
</table>
| 3.17 Were there any months when your household did not receive any income? | 1. No  
2. Yes – please circle  
August  September  October  November  December  January  February |
| 3.18 Did your household save any income?                                  | 1. No  
2. Yes  
  a. When did your household save most of this income? Please indicate on the timeline and circle response  
      August  September  October  November  December  January  February  
  b. On average, what proportion of your household’s total monthly income did your household save? Please indicate using the stones  
      stones  
  c. In what form did your household save this income?  
      i. Cash  
      ii. Deposits with banks  
      iii. Gold, silver or other precious metals  
      iv. Jewellery  
      v. Other – please specify:  
  d. When did your household spend most of this saved income? Please indicate on the timeline  
      i. August  
      ii. September  
      iii. October  
      iv. November  
      v. December  
      vi. January  
      vii. February  
      viii. Never (the household has not spent the saved income)  
  e. What were the main things that your household spent the saved income on? Please specify no more than three things  
      i. Food and other daily essentials |
ii) Durable goods  
iii) Items for the house or farm  
iv) Transport costs  
v) School costs  
vi) Repaying loans  
vii) Special occasions or celebrations (weddings, funerals)  
viii) Sent to relatives  
ix) Not spent  
x) Other – please specify: ____

| 3.19 Did your household store food for the hungry months? | 1. No  
2. Yes  
   a. Which foods? ____________________________  
   b. How much food did your household store?  
      i. A lot of food – enough to get through the hungry months  
      ii. Some food – enough to supplement the household’s diet during the hungry months  
      iii. A little bit of food – whatever the household could spare  
      iv. Other – please specify: ____________________________  
   c. What are the main problems with storing food? Please indicate no more than three problems  
      i. Eaten by rats/insects  
      ii. Stolen  
      iii. Goes rotten  
      iv. Other – please specify: ____________________________ |

| 3.20 Did anyone in your household travel away for a month or more (including return migrants)? | 1. No  
2. Yes  
   a. Who? (See codes in q 1.11 – 1.16) ____________________________  
   b. Where did he/she go?  
      i. Dili  
      ii. Indonesia  
      iii. Overseas – please specify: ____________________________  
      iv. Local village  
      v. Other – please specify: ____________________________  
   c. What was his/her main purpose for travelling?  
      i. Work  
      ii. Education  
      iii. To accompany partner/family  
      iv. Marriage/divorce/family problem/sickness  
      v. Forced relocation (e.g. village conflict)  
      vi. Other – please specify: ____________________________  
   d. When did he/she go away? Please indicate on the timeline and circle response  
   August September October November December January February  
ex. For how long was/will he/she be away?  
   i. 1 – 3 months  
   ii. 3 – 6 months  
   iii. 6 – 12 months  
   iv. More than 12 months  
f. Did he/she send money back to the household?  
   i. Yes – how much? _______ USD/month  
   ii. No |
Please answer each question in relation to THE LAST 4 WEEKS

| 3.21 Did your household borrow or obtain funds that you have to repay from a family member, friend, other individual or institution? | 1. No  
2. Yes  
a. How much money did your household borrow? _____ USD  
b. From whom did your household borrow the money?  
   i. Formal lender (e.g. bank)  
   ii. Informal lender (e.g. local money-lender)  
   iii. Friends/family  
   iv. Other – please specify: ____________________________  
c. What were the main things that your household spent the money on? *Please specify no more than three things*  
   i. Food and other daily essentials  
   ii. Durable goods  
   iii. Items for the house or farm  
   iv. Transport costs  
   v. Schooling costs  
   vi. Repaying other loans  
   vii. Special occasions or celebrations (weddings, funerals)  
   viii. Sent to relatives  
   ix. Not spent  
   x. Other – please specify: ____________________________ |

| 3.22 Did your household sell assets to earn extra income? | 1. No  
2. Yes  
a. Which assets did your household sell?  
   i. Car  
   ii. Motorbike  
   iii. TV  
   iv. Radio  
   v. Mobile phone  
   vi. Farm equipment  
   vii. Livestock  
   viii. Other – please specify: ____________________________  
b. How much money did your household earn from these sales? _____ USD  
c. What were the main things that your household spent the money on? *Please specify no more than three things*  
   i. Food and other daily essentials  
   ii. Durable goods  
   iii. Items for the house or farm  
   iv. Transport costs  
   v. Schooling costs  
   vi. Repaying other loans  
   vii. Special occasions or celebrations (weddings, funerals)  
   viii. Sent to relatives  
   ix. Not spent  
   x. Other – please specify: ____________________________ |

| 3.23 Was anything stolen from your household? | 1. No  
2. Yes  
a. What was stolen?  
   i. Money  
   ii. Food  
   iii. Crops  
   iv. Livestock  
   v. Other – please specify: ____________________________ |
**Section 4: Education**

Please complete the following table for EACH PERSON WHO NORMALLY LIVES IN THE HOUSEHOLD.

<table>
<thead>
<tr>
<th>Household member (See codes in q 1.11 – 1.16)</th>
<th>Highest year/grade of schooling completed</th>
<th>Is this person still at school?</th>
<th>If not at school but of school going age, why is he/she not at school?</th>
<th>If not at school but of school going age, what does he/she do?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ____</td>
<td>Please circle 1 2 3 4 5 6</td>
<td>Please circle 1 2</td>
<td>Please circle 1 2 3 4 5 6 7 – please specify:</td>
<td>Please circle 1 – a.</td>
</tr>
<tr>
<td>2. ____</td>
<td>1 2 3 4 5 6</td>
<td>1 2</td>
<td>1 2 3 4 5 6 7 – please specify:</td>
<td>1 – a.</td>
</tr>
<tr>
<td>3. ____</td>
<td>1 2 3 4 5 6</td>
<td>1 2</td>
<td>1 2 3 4 5 6 7 – please specify:</td>
<td>1 – a.</td>
</tr>
<tr>
<td>4. ____</td>
<td>1 2 3 4 5 6</td>
<td>1 2</td>
<td>1 2 3 4 5 6 7 – please specify:</td>
<td>1 – a.</td>
</tr>
</tbody>
</table>

Please circle 1 2 3 4 5 6 7 – please specify:
| Household member (See codes in q 1.11 – 1.16) | 4.1 Highest year/grade of schooling completed | 4.2 Is this person still at school?  
1. Yes  
2. No | 4.3 If not at school but of school going age, why is he/she not at school?  
1. Too expensive  
2. No interest  
3. Works  
4. School too far  
5. School not functional (e.g. no teachers or supplies)  
6. Illness/disability  
7. Other | 4.4 If not at school but of school going age, what does he/she do?  
1. Works  
   a. What type of work does he/she do?  
   b. Does his/her income go to the household?  
2. Helps out at home  
3. Sick  
4. Unemployed/leisure time  
5. Other |
| --- | --- | --- | --- | --- |
| 5. ________  
   1 2 3 4 5 6 | 1 2 | 1 2 3 4 5 6 | 1 2 3 4 5 6 | 1 – a. ___________________________  
  b. ___________________________  
  2 3 4 5 – please specify: ________ |
| 6. ________  
   1 2 3 4 5 6 | 1 2 | 1 2 3 4 5 6 | 1 2 3 4 5 6 | 1 – a. ___________________________  
  b. ___________________________  
  2 3 4 5 – please specify: ________ |
| 7. ________  
   1 2 3 4 5 6 | 1 2 | 1 2 3 4 5 6 | 1 2 3 4 5 6 | 1 – a. ___________________________  
  b. ___________________________  
  2 3 4 5 – please specify: ________ |
| 8. ________  
   1 2 3 4 5 6 | 1 2 | 1 2 3 4 5 6 | 1 2 3 4 5 6 | 1 – a. ___________________________  
  b. ___________________________  
  2 3 4 5 – please specify: ________ |
Please complete the following table for EACH PERSON WHO GOES TO SCHOOL

<table>
<thead>
<tr>
<th>Household member (See codes in q 1.11 – 1.16)</th>
<th>4.5</th>
<th>4.6</th>
<th>4.7</th>
<th>4.8</th>
<th>4.9</th>
<th>4.10</th>
</tr>
</thead>
<tbody>
<tr>
<td>How long does it take the person to get to school?</td>
<td>Walks</td>
<td>Bicycle</td>
<td>Motorbike</td>
<td>Car</td>
<td>Bus</td>
<td>Animal</td>
</tr>
<tr>
<td>What mode of transport does the person use to get to school?</td>
<td>1.</td>
<td>2.</td>
<td>3.</td>
<td>4.</td>
<td>5.</td>
<td>6.</td>
</tr>
<tr>
<td>What is the main language of instruction at the person’s school?</td>
<td>Tetun</td>
<td>Indonesian</td>
<td>Portuguese</td>
<td>English</td>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>What language are the person’s schoolbooks in?</td>
<td>1.</td>
<td>2.</td>
<td>3.</td>
<td>4.</td>
<td>5.</td>
<td></td>
</tr>
<tr>
<td>i In the past 4 weeks, how many days has the person been absent from school?</td>
<td>1.</td>
<td>2.</td>
<td>3.</td>
<td>4.</td>
<td>5.</td>
<td>6.</td>
</tr>
<tr>
<td>ii Why?</td>
<td>Sick</td>
<td>Working</td>
<td>No interest</td>
<td>Bad weather</td>
<td>Has not been absent</td>
<td>Other</td>
</tr>
<tr>
<td>What does he/she do?</td>
<td>Collects the household’s coffee</td>
<td>Works in the home</td>
<td>Farm labour</td>
<td>Non-farm labour</td>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>How many effective day(s) has he/she miss school to earn money for, or help out, the household?</td>
<td>1.</td>
<td>2.</td>
<td>3.</td>
<td>4.</td>
<td>5.</td>
<td>6.</td>
</tr>
<tr>
<td>i</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iv</td>
<td>More than 10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>v</td>
<td>More than 1 month</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>hour(s)</td>
<td>minutes</td>
<td>Please circle</td>
<td>Please circle</td>
<td>Please circle</td>
<td>Please circle</td>
</tr>
<tr>
<td>---</td>
<td>---------</td>
<td>---------</td>
<td>---------------</td>
<td>---------------</td>
<td>---------------</td>
<td>---------------</td>
</tr>
<tr>
<td>1</td>
<td>_______</td>
<td>_______</td>
<td>1 2 3 4 5 6</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>1 2 – a. i</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7 – please specify: ___</td>
<td>5 – please specify: ___</td>
<td>5 – please specify: ___</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Please complete the following table for EACH PERSON WHO GOES TO SCHOOL

<table>
<thead>
<tr>
<th>Household member (See codes in q 1.11 – 1.16)</th>
<th>How long does it take the person to get to school?</th>
<th>What mode of transport does the person use to get to school?</th>
<th>What is the main language of instruction at the person’s school?</th>
<th>What language are the person’s schoolbooks in?</th>
<th>i) In the past 4 weeks, how many days has the person been absent from school?</th>
<th>ii) Why?</th>
<th>In the past 4 weeks, has the person missed some or all of the school day so that he/she can earn money for, or help out, the household?</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.5</td>
<td>4.6</td>
<td>4.7</td>
<td>4.8</td>
<td>4.9</td>
<td>4.10</td>
<td>1.</td>
<td>No</td>
</tr>
<tr>
<td>4.6</td>
<td>4.10</td>
<td>4.10</td>
<td>4.10</td>
<td>4.10</td>
<td>4.10</td>
<td>1.</td>
<td>No</td>
</tr>
<tr>
<td>4.7</td>
<td>4.10</td>
<td>4.10</td>
<td>4.10</td>
<td>4.10</td>
<td>4.10</td>
<td>1.</td>
<td>No</td>
</tr>
<tr>
<td>4.8</td>
<td>4.10</td>
<td>4.10</td>
<td>4.10</td>
<td>4.10</td>
<td>4.10</td>
<td>1.</td>
<td>No</td>
</tr>
<tr>
<td>4.9</td>
<td>4.10</td>
<td>4.10</td>
<td>4.10</td>
<td>4.10</td>
<td>4.10</td>
<td>1.</td>
<td>No</td>
</tr>
<tr>
<td>4.10</td>
<td>4.10</td>
<td>4.10</td>
<td>4.10</td>
<td>4.10</td>
<td>4.10</td>
<td>1.</td>
<td>No</td>
</tr>
<tr>
<td>b. How many effective day(s) has he/she miss school to earn money for, or help out, the household?</td>
<td>i. -3</td>
<td>i. -3</td>
<td>i. -3</td>
<td>i. -3</td>
<td>i. -3</td>
<td>1.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>ii. -6</td>
<td>ii. -6</td>
<td>ii. -6</td>
<td>ii. -6</td>
<td>ii. -6</td>
<td>1.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>iii. -10</td>
<td>iii. -10</td>
<td>iii. -10</td>
<td>iii. -10</td>
<td>iii. -10</td>
<td>1.</td>
<td>No</td>
</tr>
</tbody>
</table>

Please specify: __________  

Please specify: __________  

Please specify: __________  

Please specify: __________  

Please specify: __________  

Please specify: __________
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 3. | _____ | _____ | hour(s) | 1 | 2 | 3 | 4 | 5 | 6 | 7 – please specify: |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 4. | _____ | _____ | hour(s) | 1 | 2 | 3 | 4 | 5 | 6 | 7 – please specify: |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
### Section 5: Health

Please complete the following table for EACH PERSON WHO NORMALLY LIVES IN THE HOUSEHOLD.

<table>
<thead>
<tr>
<th>Household member (See codes in q 1.11 – 1.16)</th>
<th>5.1 How would you evaluate the person's general health?</th>
<th>5.2 Has the person had any major health complaints since after the end of the last harvest? (E.g. a cough/cold, diarrhea, back pain, headache, stomach ache, fever, malaria)</th>
<th>5.3 If the person answered yes to question 5.2, how long did the health complaints affect him/her?</th>
<th>5.4 In the past 4 weeks, how many days has the person missed his or her primary daily activities (e.g. work or school) due to poor health?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Very good</td>
<td>1. No</td>
<td>1. Less than 1 week</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Good</td>
<td>2. Yes</td>
<td>2. 1 week – 1 month</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Average</td>
<td>3. 1 – 3 months</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Bad</td>
<td>4. 3 – 6 months</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Very bad</td>
<td>5. More than 6 months</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Please circle</td>
<td>Please circle</td>
<td>Please circle</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 2 3 4 5</td>
<td>1 2 – please specify condition(s):</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>1 2 3 4 5</td>
<td>1 2 – please specify condition(s):</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>1 2 3 4 5</td>
<td>1 2 – please specify condition(s):</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>1 2 3 4 5</td>
<td>1 2 – please specify condition(s):</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>
Please complete the following table for EACH PERSON WHO NORMALLY LIVES IN THE HOUSEHOLD

<table>
<thead>
<tr>
<th>Household member (See codes in q 1.11 – 1.16)</th>
<th>5.1</th>
<th>5.2</th>
<th>5.3</th>
<th>5.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has the person had any major health complaints since after the end of the last harvest? (E.g. a cough/cold, diarrhea, back pain, headache, stomach ache, fever, malaria)</td>
<td>1. No</td>
<td>2. Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If the person answered yes to question 5.2, how long did the health complaints affect him/her?</td>
<td>1. Less than 1 week</td>
<td>2. 1 week – 1 month</td>
<td>3. 1 – 3 months</td>
<td>4. 3 – 6 months</td>
</tr>
<tr>
<td>In the past 4 weeks, how many days has the person missed his or her primary daily activities (e.g. work or school) due to poor health?</td>
<td>1. one</td>
<td>2. – 3</td>
<td>3. – 6</td>
<td>4. – 10</td>
</tr>
</tbody>
</table>

5. ________ 1 2 3 4 5 1 2 – please specify condition(s): ____________ 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 6

6. ________ 1 2 3 4 5 1 2 – please specify condition(s): ____________ 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 6

7. ________ 1 2 3 4 5 1 2 – please specify condition(s): ____________ 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 6

8. ________ 1 2 3 4 5 1 2 – please specify condition(s): ____________ 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 6
Appendix F: Initial Household Survey Round 1 results
In 2010, Prof Brett Inder from Monash University and Dr David Lloyd from Southern Cross University were awarded $356K funding over three year by AusAid ADRA (research) group to examine the economic and social well being of coffee growing households and coffee growing district in Timor-Leste. A major focus is on combining the economic, environmental management and GIS capability of the two Universities to examine the structural and spatial factors that affect the capacity, of those making a living from coffee growing households and coffee growing district in Timor-Leste. A major focus is on combining the economic, environmental management and GIS capability of the two Universities to examine the structural and spatial factors that affect the capacity, of those making a living from coffee growing, to move out of poverty and to manage natural resource and environmental threats.

Research Questions
What geographic and economic factors contribute to differences in yield and income to coffee growing households, and what kinds of interventions or industry structures can be most effective in improving yield and income to poor producers?

How reliant on the incomes from coffee are poor producers, and how does this income contribute to household welfare – especially that of women and children (nutrition, health, education) – and other income-building activities?

How does volatility in production and price affect the welfare of poor producers, and what means are available to protect against these effects?

What role are cooperatives playing in the coffee production industry, and to what extent do they influence livelihoods?

What is the extent of coffee plantations, the extent of cover of coffee?
SURVEY TRAINING AND IMPLEMENTATION

During January and September 2011 two survey training workshops were conducted in Dili, Timor-Leste by Monash University and Southern Cross University. Led by Prof Brett Inder and supported by Kerrie Stimpson and Katy Cornwell. Eighteen participants attended both workshops. These were 4 days in length and covered GPS skills, survey technique, methodology, context, perfecting translations and role plays for conducting surveys.

Both workshops were conducted at the East Timor Development Agency (ETDA). The first workshop ran from the 25th-28th January, 2011; and the second from the 1st-4th September. Of the eighteen participants, nine were from National University of Timor Lorosa’e (UNTL) and nine were from the Ministry of Agriculture.

The two workshops were similar in structure and content, however more time was spent in the second one focusing on the specific context and understanding of each question (as by this time, the participants already had survey experience from the first round). Mind Mapping was used in both sessions as a tool to explore the participants’ expectations, knowledge, experiences and issues surrounding the survey process; an activity which was thoroughly enjoyed by all and very helpful for identifying the lessons learnt from the first round survey to assist in the second round. GPS training was run in both workshops so that surveys could later be analysed

The workshop was an interactive activity to give the group ownership in the survey process. The group helped in the final translation of the surveys, assisted in determining the study areas and devised activities in which they could best practice completing the survey. One such activity involved role plays in front of the group. One would ask the questions, the other would answer (sometimes pretending to be a very difficult respondent!). Senior lecturers from UNTL led discussions based on these role plays and brainstorming on how to best deal with difficult situations, and to get the most out of the whole process.

Initial Results

At the time of this initial analysis, 601 surveys from the 827 completed in the first round were used. These were from 16 suco’s in the Ermera district. The mean number of household members was 6.68 (Figure 1). The minimum number recorded was one household member, and the largest was recorded at 24 household members. Households that reporting owning particular assets were as follows;

- 1% owned a car
- 75% owned a motorbike
- 16.3% owned a television
- 35.1% owned a radio
- 50.2% owned a mobile phone
- 5% owned farm equipment

Households were asked what their main source of water was for their household. Water from a spring

1. Treasure Maps Report No. 3
2. February 2012
Initial Results Continued

Over a quarter (25.7%) of respondents said they consumed only one meal per day on average (includes both small and large meals). 64% of respondents had two or less meals per day. It is good to note however that 21% were having three small meals per day and as a combined number, 34.4% of respondents reported having 3 meals per day (either small or large).

The mean annual household income was reported at US$280.42 (median was US$200). The majority of households in this study sold their coffee as mainly Parchment (54.6%). 43.8% of households reported selling their coffee as mainly Cherry. Other households reported selling either a mix or bean. Households in this study predominantly sold their coffee to CCT (49.9%). 28.6% reported selling to other companies, 1% to middlemen and 17.8% listed other or did not respond.

Households that predominantly sold cherry had a median annual income of US$250. Households that predominantly sold parchment had a median annual income of US$150.

Households that sold their coffee to the coffee cooperative, Cooperativa Café Timor, had a median annual income of US$250. Households that sold their coffee to other companies had a median annual income of US$100.

GIS Analysis

Initial analysis of the survey data in the GIS has begun. Interesting results in relation to our investigation of the role of cooperatives. Figure 1 shows the households that sold most of their coffee to CCT. Figure 2 shows the households that sold most of their coffee to other companies. By comparing these two figures, it can be seen that CCT covers a much larger buying area than the other companies in Timor-Leste.

For More Information

Regarding the joint research funded by the AusAID ADRA (research) group into the economic and social well being of coffee growing households and coffee growing district in Timor-Leste.

Contact

Dr David Lloyd
david.lloyd@scu.edu.au
+61 (0)266269401
Appendix G: Household Survey Round 2
### Section 1: Consumption

**Please answer each question in relation to THE LAST 4 WEEKS**

1. **On average, how many meals per day did the members of your household eat?**
   - **Please circle ONE**
     - 0 meals
     - 1 small meal
     - 1 large meal (until full/satisfied)
     - 2 small meals
     - 2 large meals
     - 3 small meals
     - 3 large meals
     - Other – please specify:

2. **On average, how many days per week did the members of your household consume the following foods?**
   - **Please circle ONE for EACH food group**
     1. Rice/cereals:
     2. Legumes/nuts:
     3. Eggs/milk products:
     4. Fish:
     5. Meat:
     6. Vegetables:
     7. Fruit:
     8. Fats/oils/butter:
     9. Sweets/cakes/biscuits:
     10. Soft drink/alcohol:
     11. Other (e.g. coffee):

3. **Of the total amount of food that your household consumed, what proportion was:**
   - Purchased by your household? __ stones
   - Grown by your household? __ stones
   - Collected from the wild/caught by your household? __ stones

4. **From where/whom did your household buy most of its food?**
   - **Please circle ONE or TWO**
     1. Aldeia market/local market
     2. Friends/neighbours
     3. Passing sellers/roadside stalls
     4. Main towns
     5. Other – please specify:

5. **What was the average price of rice?**
   - USD per Kg  
   - USD per sack weighing _____ Kg
1.6 Did your household give food to other households?
- No
- Yes
  1. Mainly to family members in other households
  2. Mainly to friends and neighbours
  3. To whomever needs it / both of above
  4. Other – please specify: _______________________

1.7 Did your household receive food from other households?
- No
- Yes
  1. Mainly from family members in other households
  2. Mainly from friends and neighbours
  3. From whomever has it / both of above
  4. Other – please specify: _______________________

Please answer each question in relation to when your household’s MONTHLY INCOME IS LOWEST OR NONE.

1.8 When is your household’s monthly income lowest or none?
*January*  *February*  *March*  *April*  *May*  *June*  *July*  *August*  *September*  *October*  *November*  *December*

1.9 On average, how many meals per day did the members of your household eat?
*Please circle ONE*  
1. 0 meals
2. 1 small meal
3. 1 large meal (until full/satisfied)
4. 2 small meals
5. 2 large meals
6. 3 small meals
7. 3 large meals
8. Other – please specify: _______________________

1.10 On average, how many days per week did the members of your household consume the following foods?
*Please circle ONE for EACH food group*  
1. Rice/cereals: 0 1 2 3 4 5 6 7 days
2. Legumes/nuts: 0 1 2 3 4 5 6 7 days
3. Eggs/milk products: 0 1 2 3 4 5 6 7 days
4. Fish: 0 1 2 3 4 5 6 7 days
5. Meat: 0 1 2 3 4 5 6 7 days
6. Vegetables: 0 1 2 3 4 5 6 7 days
7. Fruit: 0 1 2 3 4 5 6 7 days
8. Fats/oils/butter: 0 1 2 3 4 5 6 7 days
9. Sweets/cakes/biscuits: 0 1 2 3 4 5 6 7 days
10. Soft drink/alcohol: 0 1 2 3 4 5 6 7 days
11. Other (e.g. coffee): 0 1 2 3 4 5 6 7 days

1.11 Did your household give food to other households that did not have enough food to eat?
- No
- Yes
  1. Mainly to family members in other households
  2. Mainly to friends and neighbours
  3. To whomever needs it / both of above
  4. Other – please specify: _______________________

1.12 Did your household receive food from other households if your household did not have enough food to eat?
- No
- Yes
  1. Mainly from family members in other households
  2. Mainly from friends and neighbours
  3. From whomever has it / both of above
  4. Other – please specify: _______________________


Section 2: Income

Please complete the following table with respect to your household’s COFFEE income from THIS YEAR’S HARVEST.

<table>
<thead>
<tr>
<th>2.1 Form if Coffee Income</th>
<th>Cherry</th>
<th>Parchment</th>
<th>Other:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0. No</td>
<td>1. Yes</td>
<td>0. No</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1. Yes</td>
</tr>
<tr>
<td>2.2 When did your household earn this income? <strong>Circle ALL that apply</strong></td>
<td>April May June July</td>
<td>April May June July</td>
<td>April May June July</td>
</tr>
<tr>
<td></td>
<td>August September</td>
<td>August September</td>
<td>August September</td>
</tr>
<tr>
<td>2.3 Who did your household sell most of the coffee to?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. CCT</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2. A company other than CCT</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3. A middleman</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4. Other – please specify</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>2.4 Why did you sell mostly to this buyer?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. They offered the best price</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2. Always have</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3. They come to me</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4. My coffee would have been/was rejected by other buyers</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>5. No other choice – contract/agreement</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>6. No other choice – only option</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>7. Other – please specify</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>2.5 Did the buyers come to your household to buy the coffee, or did you have to travel somewhere to sell it?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Came to household</td>
<td>1.</td>
<td>1.</td>
<td>1.</td>
</tr>
<tr>
<td>2. Had to travel</td>
<td>2.</td>
<td>2.</td>
<td>2.</td>
</tr>
<tr>
<td>i. How far did you travel?</td>
<td>i. _____ kms</td>
<td>i. _____ kms</td>
<td>i. _____ kms</td>
</tr>
<tr>
<td>ii. How long did it take to travel there?</td>
<td>ii. ___ days ___ hours minutes</td>
<td>ii. ___ days ___ hours minutes</td>
<td>ii. ___ days ___ hours minutes</td>
</tr>
<tr>
<td>iii. How did you get there?</td>
<td>iii. _________</td>
<td>iii. _________</td>
<td>iii. _________</td>
</tr>
<tr>
<td>2.6 How many Kgs/sacks did your household sell?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>_____ Kgs or _____ Kgs or _____ Kgs or</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>_____ sacks _____ sacks _____ sacks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>weighing _____ Kgs weighing _____ Kgs weighing _____ Kgs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.7 What price did you receive, on average?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>____ USD per 1 Kg or ____ USD per sack</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>weighing _____ Kgs weighing _____ Kgs weighing _____ Kgs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.8 Total income received?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>_____ USD</td>
<td>_____ USD</td>
<td>_____ USD</td>
<td></td>
</tr>
<tr>
<td>2.9 How was the price determined? <strong>Please circle ONE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Set price</td>
<td>1.</td>
<td>1.</td>
<td>1.</td>
</tr>
<tr>
<td>2. Bargained/mutual agreement</td>
<td>2.</td>
<td>2.</td>
<td>2.</td>
</tr>
<tr>
<td>2.10 What language(s) were used with your buyers? <strong>Please circle ALL that apply</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>2.11 What were the top 3 things that your household spent the coffee income on? <strong>Please circle UP TO THREE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Food and other daily essentials</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2. Items for the house or farm</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3. Transport costs</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4. Schooling costs</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>5. Repaying loans (bank/other people)</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>6. special occasions or celebrations</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>7. Sent to relatives</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>8. Some money not spent (saved)</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>9. Other – please specify:</td>
<td>9</td>
<td>9</td>
<td>9</td>
</tr>
</tbody>
</table>
2.12 Did your household sell any coffee left over from last harvest during the off-season (i.e. November-March)?

<table>
<thead>
<tr>
<th>1. Yes</th>
<th>2. No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete 2.13-2.23 in table below</td>
<td>Skip to 2.24 on the next page</td>
</tr>
</tbody>
</table>

2.13 Why didn’t you sell this coffee at/shortly after harvest time?  
*Please circle ALL that apply*

1. Harvested later than others/missed the trucks
2. Could not sell
3. Prefer to keep it to earn income during the off-season
4. Can sell it for more money in the off-season
5. Can sell it more easily in the off-season

2.14 Form of coffee income  
*For coffees sold in the off-season*

<table>
<thead>
<tr>
<th>Parchment</th>
<th>Other</th>
</tr>
</thead>
</table>

2.15 When did your household earn this income?  
*Please circle ALL that apply*

<table>
<thead>
<tr>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
<th>March</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

2.16 Who did your household sell most of the coffee to?  

1. CCT  
2. A company other than CCT  
3. A middleman  
4. Other – please specify

<table>
<thead>
<tr>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

2.17 Did the buyer come to your household to buy the coffee, or did you have to travel somewhere to sell it?  

1. Came to household  
2. Had to travel-  
i. How far did you travel?  
   ii. How long did it take to travel there?  
   iii. How did you get there?

<table>
<thead>
<tr>
<th>1.</th>
<th>2.</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. ______ kms</td>
<td>i. ______ kms</td>
</tr>
<tr>
<td>ii. ______ hours</td>
<td>ii. ______ hours</td>
</tr>
<tr>
<td>___ minutes</td>
<td>___ minutes</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.18 Total income received?  

<table>
<thead>
<tr>
<th>______ USD</th>
<th>______ USD</th>
</tr>
</thead>
</table>

2.19 How many Kgs/sacks did your household sell?  

<table>
<thead>
<tr>
<th>______ Kgs or ______ sacks</th>
<th>______ Kgs or ______ sacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>weighing ______ Kgs</td>
<td>weighing ______ Kgs</td>
</tr>
</tbody>
</table>

2.20 What price did you receive, on average?  

<table>
<thead>
<tr>
<th>______ USD per 1 Kg or ______ USD per sack weighing ______ Kgs</th>
<th>______ USD per 1 Kg or ______ USD per sack weighing ______ Kgs</th>
</tr>
</thead>
</table>

2.21 How was this price determined?  

1. Set price  
2. Bargained/mutual agreement  

<table>
<thead>
<tr>
<th>1.</th>
<th>2.</th>
</tr>
</thead>
</table>

2.11 What were the top 3 things that your household spent the coffee income on?  
*Please circle UP TO THREE*

1. Food and other daily essentials  
2. Items for the house or farm  
3. Transport costs  
4. Schooling costs  
5. Repaying loans (bank/other people)  
6. special occasions or celebrations  
7. Sent to relatives  
8. Some money not spent (saved)  
9. Other – please specify

<table>
<thead>
<tr>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
<th>8.</th>
<th>9.</th>
</tr>
</thead>
<tbody>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2.24 Out of your household’s total annual income, what proportion is income from coffee?

*Using the stones, please indicate*

Coffee income represents ______ stones.

2.25 Why don’t you process all the coffee you harvest?

*Please circle ALL that apply*

1. All coffee harvested by this household is processed
2. Takes too long / want the income quickly
3. Don’t have the skills/knowledge
4. Don’t have access to the machinery
5. Can’t sell it processed / not allowed by the buyer
6. Lower price received if processed
7. Other, please specify: ______________________

2.26 Did your household hold / were they involved in a celebration for the finish of harvest?

1. No
2. Yes – a. How much did you contribute to the celebration?
   ______ USD

   b. Approximately how many people attended?
   ______ people

   c. How long did the celebration go for?
   1. A few hours
   2. All day / all night
   3. 1-4 days
   4. 5 days or more

   d. Did you invite people who gave you food during the hungry months?
   1. Yes
   2. No – was not given food in hungry months
   3. No – did not invite these people
Please complete the following table with respect to each of your household’s OTHER SOURCES OF INCOME (i.e. other than coffee) since the LAST SURVEY.

<table>
<thead>
<tr>
<th>2.27 Did the household receive any income from services/labour rendered?</th>
<th>2.28 Specify Service or Labour performed</th>
<th>2.29 How much income did your household earn from this activity?</th>
<th>0. No – skip to 2.33 on the next page</th>
<th>1. Yes – complete questions 2.28-2.32 below</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g. payment for work as a carpenter, teacher, labourer, etc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.28 Specify Service or Labour performed</td>
<td>1.</td>
<td>2.</td>
<td>3.</td>
<td>4.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.29 How much income did your household earn from this activity?</td>
<td>_____ USD total or _____ USD per 1 month</td>
<td>_____ USD total or _____ USD per 1 month</td>
<td>_____ USD total or _____ USD per 1 month</td>
<td>_____ USD total or _____ USD per 1 month</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.30 When did your household earn this income? Please circle ALL that apply</td>
<td>February March April May June July August All months</td>
<td>February March April May June July August All months</td>
<td>February March April May June July August All months</td>
<td>February March April May June July August All months</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.31 Which household member(s) helped to earn this income? Please circle ALL that apply</td>
<td>1. All members</td>
<td>2. Some members</td>
<td>3. ________</td>
<td>4. ________</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.32 What were the top 3 things that your household spent the income on? Please circle UP TO THREE</td>
<td>1. Food and other daily essentials</td>
<td>2. Items for the house or farm</td>
<td>3. Transport costs</td>
<td>4. Schooling costs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Repaying loans (bank/other people)</td>
<td>6. special occasions or celebrations</td>
<td>7. Sent to relatives</td>
<td>8. Some money not spent (saved)</td>
<td>9. Other = please specify:</td>
</tr>
</tbody>
</table>
2.33 Did the household receive any income from selling crops

0. No – skip to 2.42 on the next page
1. Yes – complete questions 2.34-2.41 below

<table>
<thead>
<tr>
<th>2.34 Specify crop</th>
<th>1.___________</th>
<th>2.___________</th>
<th>3.___________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please fill out the table for each crop separately</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2.35 How much crop was sold?</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Kg</td>
</tr>
<tr>
<td>Or</td>
</tr>
<tr>
<td>In Sacks – number of sacks, weight of each sack</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2.36 How much income did your household earn from this activity?</th>
</tr>
</thead>
<tbody>
<tr>
<td>____USD or ____USD per ____</td>
</tr>
<tr>
<td>____USD or ____USD per ____</td>
</tr>
<tr>
<td>____USD or ____USD per ____</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2.37 How much income did your household earn from this activity?</th>
</tr>
</thead>
</table>

| 2.38 When did your household earn this income? |

<table>
<thead>
<tr>
<th>2.39 Which household member(s) helped to earn this income?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. All members</td>
</tr>
<tr>
<td>2. Some members</td>
</tr>
<tr>
<td>a. Adult men</td>
</tr>
<tr>
<td>b. Adult women</td>
</tr>
<tr>
<td>c. Male children</td>
</tr>
<tr>
<td>d. Female children</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2.40 What were the top 3 things that your household spent the income on? Please circle</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Food and other daily essentials</td>
</tr>
<tr>
<td>2. Items for the house or farm</td>
</tr>
<tr>
<td>3. Transport costs</td>
</tr>
<tr>
<td>4. Schooling costs</td>
</tr>
<tr>
<td>5. Repaying loans (bank/other people)</td>
</tr>
<tr>
<td>6. special occasions or celebrations</td>
</tr>
<tr>
<td>7. Sent to relatives</td>
</tr>
<tr>
<td>8. Some money not spent (saved)</td>
</tr>
<tr>
<td>9. Other = please specify:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.___________</th>
<th>2.___________</th>
<th>3.___________</th>
</tr>
</thead>
<tbody>
<tr>
<td>UP TO THREE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.___________</td>
<td>2.___________</td>
<td>3.___________</td>
</tr>
<tr>
<td>4.___________</td>
<td>5.___________</td>
<td>6.___________</td>
</tr>
<tr>
<td>7.___________</td>
<td>8.___________</td>
<td>9.___________</td>
</tr>
</tbody>
</table>
### 2.41 What tools do you use in production of crops?

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>2.</td>
<td>3.</td>
<td>4.</td>
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</tbody>
</table>

### 2.42 What animals do you currently have and how many?

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
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</tr>
</thead>
</table>

**Did the household receive any income from selling livestock since the LAST SURVEY?**

- No – skip to Section 3 on the next page
- Yes – complete questions 2.44-2.50 below

### 2.44 Specify animal

Please fill out the table for each animal separately

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>2.</td>
<td>3.</td>
<td>4.</td>
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</tbody>
</table>

### 2.45 How many animals were sold?

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>_____ Animals</td>
<td>_____ Animals</td>
<td>_____ Animals</td>
<td>_____ Animals</td>
</tr>
</tbody>
</table>

### 2.46 What was the average price received per animal?

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>_____ USD</td>
<td>_____ USD</td>
<td>_____ USD</td>
<td>_____ USD</td>
</tr>
</tbody>
</table>

### 2.47 How much income did your household earn from this activity?

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>_____ USD</td>
<td>_____ USD</td>
<td>_____ USD</td>
<td>_____ USD</td>
</tr>
</tbody>
</table>

### 2.48 When did your household earn this income?

*Please circle ALL that apply*

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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<tbody>
<tr>
<td>February</td>
<td>February</td>
<td>February</td>
<td>February</td>
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<tr>
<td>March</td>
<td>March</td>
<td>March</td>
<td>March</td>
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<tr>
<td>April</td>
<td>April</td>
<td>April</td>
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<td>May</td>
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<td>June</td>
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<td>July</td>
<td>July</td>
<td>July</td>
<td>July</td>
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<tr>
<td>August</td>
<td>August</td>
<td>August</td>
<td>August</td>
</tr>
</tbody>
</table>

### 2.49 Which household member(s)

1. All members
2. Some members
   a. Adult men
   b. Adult women
   c. Male children
   d. Female children

1. 1. 1. 1. 1.
2. 2. 2. 2. 2.
3. a. a. a. a.
4. b. b. b. b.
5. c. c. c. c.
6. d. d. d. d.

### 2.50 What were the top 3 things that your household spent the income on? *Please circle UP TO THREE*

1. Food and other daily essentials
2. Items for the house or farm
3. Transport costs
4. Schooling costs
5. Repaying loans (bank/other people)
6. Special occasions or celebrations
7. Sent to relatives
8. Some money not spent (saved)
9. Other = please specify:

1. 1. 1. 1.
2. 2. 2. 2.
3. 3. 3. 3.
4. 4. 4. 4.
5. 5. 5. 5.
6. 6. 6. 6.
7. 7. 7. 7.
8. 8. 8. 8.
9. 9. 9. 9.
### Section 3: Savings, Loans and Consumption Smoothing

**Please answer each question in relation to the time SINCE THE LAST SURVEY.**

| 3.1 Were there any months when your household did not receive any income? | 0. No  
| | 1. Yes – please circle ALL that apply  
| | February March April May June July August |
| | 3.2 Did your household save any income?  
| | 1. No  
| | 2. Yes – a. When did your household save most of this income?  
| | February March April May June July August  
| | b. On average, what proportion of your household’s total monthly income did your household save?  
| | Please indicate using the stones: _______ stones  
| | c. In what form did your household save this income?  
| | 1. Cash  
| | 2. Deposits with banks  
| | 3. Gold, silver or other precious metals  
| | 4. Jewellery  
| | 5. Other – please specify: ____________________________  
| | d. Did your household spend this saved income?  
| | 1. No  
| | 2. Yes – When? Please circle ALL that apply:  
| | February March April May June July August  
| | e. What were the main things that your household spent the saved income on? Please specify no more than three things  
| | 1. Food and other daily essentials  
| | 2. Items for the house or farm  
| | 3. Transport costs  
| | 4. School costs  
| | 5. Repaying loans  
| | 6. Special occasions or celebrations (weddings, funerals)  
| | 7. Sent to relatives  
| | 8. Not spent  
| | 9. Other – please specify: ____________________________  

| 3.3 Did your household store food for the hungry months? | 0. No  
| | 1. Yes – a. Which foods?  
| | Food 1: _______ Amount: Kg or Sacks  
| | Food 2: _______ Amount: Kg or Sacks  
| | Food 3: _______ Amount: Kg or Sacks  
| | Food 4: _______ Amount: Kg or Sacks  
| | Food 5: _______ Amount: Kg or Sacks |
3.4 Did anyone in your household travel away for one month or more (including return migrants)?

1. No – skip to question 3.5
2. Yes – How many? _______ people in total, of which:
   a. _______ number of adult men
   b. _______ number of adult women
   c. _______ number of male children aged 12 or under
   d. _______ number of female children aged 12 or under
   e. _______ number of male children aged 13-17
   f. _______ number of female children aged 13-17

   If any adults travelled, please complete a-e in the table below.
   Otherwise, skip to question 3.5.

<table>
<thead>
<tr>
<th>a. Adult Men</th>
<th>b. Adult Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Where did they go?</td>
<td>a. Where did they go?</td>
</tr>
<tr>
<td>Circle ALL that apply</td>
<td>Circle ALL that apply</td>
</tr>
<tr>
<td>1. Dili</td>
<td>1. Dili</td>
</tr>
<tr>
<td>2. Indonesia</td>
<td>2. Indonesia</td>
</tr>
<tr>
<td>3. Overseas – please specify:</td>
<td>3. Overseas – please specify:</td>
</tr>
<tr>
<td>4. Another village or town</td>
<td>4. Another village or town</td>
</tr>
<tr>
<td>b. What was the main purpose for travel?</td>
<td>b. What was the main purpose for travel?</td>
</tr>
<tr>
<td>Circle ALL that apply</td>
<td>Circle ALL that apply</td>
</tr>
<tr>
<td>1. Work</td>
<td>1. Work</td>
</tr>
<tr>
<td>2. Education</td>
<td>2. Education</td>
</tr>
<tr>
<td>3. To accompany partner/family</td>
<td>3. To accompany partner/family</td>
</tr>
<tr>
<td>5. Forced relocation (e.g. village conflict)</td>
<td>5. Forced relocation (e.g. village conflict)</td>
</tr>
<tr>
<td>6. Other – please specify:</td>
<td>6. Other – please specify:</td>
</tr>
<tr>
<td>c. When did they go away?</td>
<td>c. When did they go away?</td>
</tr>
<tr>
<td>Circle ALL that apply</td>
<td>Circle ALL that apply</td>
</tr>
<tr>
<td>February</td>
<td>February</td>
</tr>
<tr>
<td>March</td>
<td>June</td>
</tr>
<tr>
<td>April</td>
<td>July</td>
</tr>
<tr>
<td>May</td>
<td>August</td>
</tr>
<tr>
<td>d. For how long was/will they be away?</td>
<td>d. For how long was/will they be away?</td>
</tr>
<tr>
<td>Circle ALL that apply</td>
<td>Circle ALL that apply</td>
</tr>
<tr>
<td>1 – 3 months</td>
<td>1 – 3 months</td>
</tr>
<tr>
<td>3 – 6 months</td>
<td>3 – 6 months</td>
</tr>
<tr>
<td>6 – 12 months</td>
<td>6 – 12 months</td>
</tr>
<tr>
<td>More than 12 months</td>
<td>More than 12 months</td>
</tr>
<tr>
<td>Don’t know</td>
<td>Don’t know</td>
</tr>
<tr>
<td>e. Did he/she send money back to the household?</td>
<td>e. Did he/she send money back to the household?</td>
</tr>
<tr>
<td>1. No</td>
<td>1. No</td>
</tr>
</tbody>
</table>
### 3.5 Did your household borrow or obtain funds that you have to repay from a family member, friend, other individual or institution?

1. No
2. Yes –
   a. How much money did your household borrow? USD
   b. From whom did your household borrow the money?
      1. Formal lender (e.g. bank)
      2. Informal lender (e.g. local money-lender)
      3. Friends/family
      4. Other – please specify: ______________
   c. What were the main things that your household spent the money on? Please specify no more than three things
      1. Food and other daily essentials
      2. Items for house or farm
      3. Transport costs
      4. Schooling costs
      5. Repaying other loans
      6. Special occasions or celebrations (weddings, funerals)
      7. Sent to relatives
      8. Not spent
      9. Other – please specify: ______________________

### 3.6 Did your household sell assets to earn extra income?

1. No
2. Yes –
   a. Which assets did your household sell?
      1. Car
      2. Motorbike
      3. TV
      4. Radio
      5. Mobile phone
      6. Farm equipment
      7. Livestock
      8. Other – please specify: ______________________
   b. How much money did your household earn from these sales? USD
   c. What were the main things that your household spent the money on? Please specify no more than three things
      1. Food and other daily essentials
      2. Items for house or farm
      3. Transport costs
      4. Schooling costs
      5. Repaying other loans
      6. Special occasions or celebrations (weddings, funerals)
      7. Sent to relatives
      8. Not spent
      9. Other – please specify: ______________________

### 3.7 Was anything stolen from your household?

1. No
2. Yes –
   What was stolen?
   1. Money
   2. Food
   3. Crops
   4. Livestock
   5. Other – please specify: ____________
Please answer each question in relation to your household’s PLANS for the future

<table>
<thead>
<tr>
<th>3.8 Does your household plan to save any income for the hungry months?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. No</td>
</tr>
<tr>
<td>2. Yes – a. On average, what proportion of your household’s total monthly income does your household plan to save?</td>
</tr>
<tr>
<td>Please indicate using the stones.</td>
</tr>
</tbody>
</table>

b. What are the main things that your household plans to spend the saved income on?
1. Food and other daily essentials
2. Items for house or farm
3. Transport costs
4. Schooling costs
5. Repaying other loans
6. Special occasions or celebrations (weddings, funerals)
7. Sent to relatives
8. Not spent
9. Other – please specify: _______________________

<table>
<thead>
<tr>
<th>3.9 Does your household plan to store food for the hungry months?</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
</tr>
<tr>
<td>Yes – a. Which foods and how much?</td>
</tr>
<tr>
<td>Food 1: ________ Amount: Kg or Sacks</td>
</tr>
<tr>
<td>Food 2: ________ Amount: Kg or Sacks</td>
</tr>
<tr>
<td>Food 3: ________ Amount: Kg or Sacks</td>
</tr>
</tbody>
</table>

Section 4: Coffee growing activities

<table>
<thead>
<tr>
<th>4.1 How large is the area of land from which your household collects coffee from? Please provide your answer in one of the following units</th>
</tr>
</thead>
<tbody>
<tr>
<td>______ square metres (1m x 1m)</td>
</tr>
<tr>
<td>or _______ acres (10m x 10m)</td>
</tr>
<tr>
<td>or ______ hectares (100m x 100m)</td>
</tr>
<tr>
<td>or about the size of ______ small houses</td>
</tr>
</tbody>
</table>
| or other, please specify: _______________________

<table>
<thead>
<tr>
<th>4.2 How dense are the trees on this land?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very dense</td>
</tr>
<tr>
<td>Somewhat dense</td>
</tr>
<tr>
<td>Not very dense</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4.3 How large is the area of land your household uses for living, keeping livestock and growing crops? Please provide your answer in one of the following units</th>
</tr>
</thead>
<tbody>
<tr>
<td>______ square metres (1m x 1m)</td>
</tr>
<tr>
<td>or _______ acres (10m x 10m)</td>
</tr>
<tr>
<td>or ______ hectares (100m x 100m)</td>
</tr>
<tr>
<td>or about the size of ______ small houses</td>
</tr>
</tbody>
</table>
| or other, please specify: _______________________

<table>
<thead>
<tr>
<th>4.4 Does your household collect coffee from the same trees each year?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Don’t know</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4.5 Who is allowed to harvest from these trees?</th>
</tr>
</thead>
<tbody>
<tr>
<td>My household only</td>
</tr>
<tr>
<td>Local community/friends/relatives - only people my household knows</td>
</tr>
<tr>
<td>Anyone, including people my household doesn’t know</td>
</tr>
</tbody>
</table>
| 4.6 Do other people collect coffee from those trees? | 1. Yes  
2. No  
3. Don’t know |
|---|---|
| 4.7 Does your household maintain those trees during the year? | 1. No  
2. Yes – a. What does your household do?  
1. Pruning  
2. Mulching  
3. Planting  
4. Other: specify_________  
  b. How often does your household maintain the trees during the year?  
1. All year round  
2. At particular times of the season (regular):  
  Number of times per year: ________  
3. Every now and then (ad hoc) |
| 4.8 Do other people (not from your household) maintain those trees during the year? | 1. Yes – a. Who cares for the trees?  
1. A formal group of villagers  
2. An informal group of villagers  
3. Don’t know  
4. Other: specify_________  
  b. What do they do?  
1. Pruning  
2. Mulching  
3. Planting  
4. Don’t know  
5. Other: specify_________  
  c. How frequently do they maintain the trees?  
1. All year round  
2. At particular times of the season:  
  Number of times per year: ________  
3. Every now and then  
  d. Do they receive any payment (in cash or in kind) for this?  
1. Yes: specify_________  
  2. No  
3. Don’t know |
4.9 Over the past four years has anyone in your household had any education and training on coffee production?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0. No</td>
<td></td>
</tr>
<tr>
<td>1. Yes - a. Who ran the training?</td>
<td></td>
</tr>
<tr>
<td>1. Ministry of Agriculture</td>
<td></td>
</tr>
<tr>
<td>2. CCT</td>
<td></td>
</tr>
<tr>
<td>3. ETICA</td>
<td></td>
</tr>
<tr>
<td>4. Other coffee company</td>
<td></td>
</tr>
<tr>
<td>5. Don’t know</td>
<td></td>
</tr>
<tr>
<td>6. Other, specify________________</td>
<td></td>
</tr>
</tbody>
</table>

b. What was the training about?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Coffee disease and maintenance</td>
<td></td>
</tr>
<tr>
<td>2. Coffee drying</td>
<td></td>
</tr>
<tr>
<td>3. Pruning</td>
<td></td>
</tr>
<tr>
<td>4. Coffee quality</td>
<td></td>
</tr>
<tr>
<td>5. Coffee tree rehabilitation and rejuvenation</td>
<td></td>
</tr>
</tbody>
</table>

c. How many hours did each course involve?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A few hours</td>
<td></td>
</tr>
<tr>
<td>2. A whole day</td>
<td></td>
</tr>
<tr>
<td>3. A few days</td>
<td></td>
</tr>
<tr>
<td>4. A week</td>
<td></td>
</tr>
<tr>
<td>5. More than 1 week</td>
<td></td>
</tr>
</tbody>
</table>

4.10 Did your household try any new practices from the training afterwards?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0. No</td>
<td></td>
</tr>
<tr>
<td>1. Yes – a. What did your household try?</td>
<td></td>
</tr>
<tr>
<td>1. Using fertiliser</td>
<td></td>
</tr>
<tr>
<td>2. Pruning</td>
<td></td>
</tr>
<tr>
<td>3. Other, specify ______________</td>
<td></td>
</tr>
</tbody>
</table>

b. Will you keep employing these practices?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0. No - why not?</td>
<td></td>
</tr>
<tr>
<td>1. Yes</td>
<td></td>
</tr>
</tbody>
</table>

4.11 Do you believe that your household experienced better outcomes (either in quantity or quality of product) as a result of the training?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. No</td>
<td></td>
</tr>
<tr>
<td>2. Yes – what are those better outcomes? ______________________</td>
<td></td>
</tr>
</tbody>
</table>

4.12 Would your household like more training about growing coffee?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. No</td>
<td></td>
</tr>
<tr>
<td>2. Yes – specify __________________</td>
<td></td>
</tr>
</tbody>
</table>

4.13 Are you a member of CCT?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. No</td>
<td></td>
</tr>
<tr>
<td>2. Yes – Have you ever attended a members meeting?</td>
<td></td>
</tr>
<tr>
<td>1. No</td>
<td></td>
</tr>
<tr>
<td>2. Yes</td>
<td></td>
</tr>
</tbody>
</table>

4.14 What changes would you like to see with how CCT operates?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. More help for family / community</td>
<td></td>
</tr>
<tr>
<td>2. Increase in buying price</td>
<td></td>
</tr>
<tr>
<td>3. Greater member involvement in decisions</td>
<td></td>
</tr>
<tr>
<td>4. Training / education</td>
<td></td>
</tr>
<tr>
<td>5. Don’t know</td>
<td></td>
</tr>
<tr>
<td>6. Other, please specify:</td>
<td></td>
</tr>
</tbody>
</table>

4.15 Have you heard of Fairtrade?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. No</td>
<td></td>
</tr>
<tr>
<td>2. Yes – Are any of your buyers Fairtrade?</td>
<td></td>
</tr>
<tr>
<td>1. Yes – has Fairtrade helped your household?</td>
<td></td>
</tr>
<tr>
<td>1. No</td>
<td></td>
</tr>
<tr>
<td>2. Yes, please specify how:</td>
<td></td>
</tr>
<tr>
<td>3. No</td>
<td></td>
</tr>
<tr>
<td>4. Don’t know</td>
<td></td>
</tr>
</tbody>
</table>
**Section 5: Education, Work and Health**

Please complete the following table for EACH PERSON WHO NORMALLY LIVES IN THE HOUSEHOLD

<table>
<thead>
<tr>
<th>5.1 Name of household member</th>
<th>1. __________________</th>
<th>2. __________________</th>
<th>3. __________________</th>
<th>4. __________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2 Age</td>
<td>Years</td>
<td>Years</td>
<td>Years</td>
<td>Years</td>
</tr>
<tr>
<td>5.3 Gender</td>
<td>0. Male</td>
<td>1. Female</td>
<td>0. Male</td>
<td>1. Female</td>
</tr>
<tr>
<td>------------------------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>5.4 Relationship to household mother</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Household mother</td>
<td>1.</td>
<td>1.</td>
<td>1.</td>
<td>1.</td>
</tr>
<tr>
<td>2. Husband/partner</td>
<td>2.</td>
<td>2.</td>
<td>2.</td>
<td>2.</td>
</tr>
<tr>
<td>3. Son/daughter/in-law</td>
<td>3.</td>
<td>3.</td>
<td>3.</td>
<td>3.</td>
</tr>
<tr>
<td>(including adopted/step sons/daughters)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Grandchild</td>
<td>5.</td>
<td>5.</td>
<td>5.</td>
<td>5.</td>
</tr>
<tr>
<td>7. Sister/brother/in-law</td>
<td>7.</td>
<td>7.</td>
<td>7.</td>
<td>7.</td>
</tr>
<tr>
<td>10. Other, please specify</td>
<td>10.</td>
<td>10.</td>
<td>10.</td>
<td>10.</td>
</tr>
<tr>
<td>------------------------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>5.5 Does the person usually attend school?</td>
<td>0. No</td>
<td>1. Yes</td>
<td>0. No</td>
<td>1. Yes</td>
</tr>
<tr>
<td>------------------------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>5.6 Did the person help with this year’s harvest?</td>
<td>0. No</td>
<td>1. Yes</td>
<td>0. No</td>
<td>1. Yes</td>
</tr>
<tr>
<td>------------------------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>5.7 If the person answered yes to BOTH 5.5 and 5.6, when did they help with the harvest?</td>
<td>1. Yes hours/week</td>
<td>1. Yes hours/week</td>
<td>1. Yes hours/week</td>
<td>1. Yes hours/week</td>
</tr>
<tr>
<td>1. Outside school time</td>
<td>2. Within regular school time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>------------------------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>5.9 Has the person had any major health complaints in the last 4 weeks?</td>
<td>e.g. a cough/cold, diarrhoea, back pain, headache, stomach ache, fever, malaria</td>
<td>0. No</td>
<td>0.</td>
<td>0.</td>
</tr>
<tr>
<td>------------------------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>5.10 In the past 28 days (4 weeks), how many days has the person missed his or her primary daily activities (e.g. work/ school) due to poor health?</td>
<td>Days</td>
<td>Days</td>
<td>Days</td>
<td>Days</td>
</tr>
<tr>
<td>------------------------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>5.11 Was there a time in the last year when the person went hungry because there was not enough food to eat?</td>
<td>1. Yes</td>
<td>0. No- a No members went hungry</td>
<td>0. – a.</td>
<td>0. – a.</td>
</tr>
<tr>
<td>------------------------------</td>
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<td>b This person didn’t go hungry, but others in the household did</td>
<td>b.</td>
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**Section 6: Religion (Catholic)**

<table>
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<th>Question</th>
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| 6.1 How often do you go to Church?                                       | 1. Less than once a month  
2. A few times a month  
3. Once a week  
4. More than once a week                                                |
| 6.2 How important is the Church to your life?                            | 1. Very important  
2. Somewhat important  
3. Not very important                                                      |
| 6.3 Is the Church more or less important to you since Timor-Leste achieved independence from Indonesia? | 1. More important  
2. About the same  
3. Less important                                                        |
| 6.4 What services does the Church provide for you and your family?       | 1. Spiritual guidance  
2. Other, please                                                             |
| specify:                                                                   |                                                                         |
Coffee, Poverty & Economic Development in Timor-Leste

2013

Southern Cross University

MONASH University
Coffee, Poverty & Economic Development in Timor-Leste

Kafé, Pobreza & Dezenvolvimentu Ekonomia iha Timor-Leste

RESEARCH REPORT 2013

For copies of this report or other enquiries, please contact:

Professor Brett Inder,
Centre for Development Economics,
Monash University, Clayton VIC 3800, Australia
brett.inder@monash.edu

Dr David Lloyd,
School of Environment, Science and Engineering,
Southern Cross University, Lismore NSW 2480, Australia
david.lloyd@scu.edu.au

Dr Katy Cornwell,
Centre for Development Economics,
Monash University, Clayton VIC 3800, Australia
katy.cornwell@monash.edu

Mr Zeferino Tilman,
Faculty of Agriculture,
Universidade Nacionale Timor Lorosa’e, Dili, Timor-Leste
ztilman1411@hotmail.com
CREATIVE APPROACHES TO ADDRESSING POVERTY

Government

resources

Co-operatives
Built around trust & holistic support

who provide

Training & Support

Cash Transfers

resulting in

Better Yields
Higher Income
Greater Financial Inclusion
Improved Household & Community Welfare

Microfinance Providers
to develop

Savings Schemes

which deliver
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1 OVERVIEW

SUMÁRIU JERÁL

This report provides the main findings of a study that has examined the ways in which the coffee sector operates in Timor-Leste. Focus has been at the household level, seeking to understand the ways in which coffee producing households manage their coffee production and interact with the market. The study also examines the social impact on household members of being heavily reliant on coffee as their main source of income.

Relatóriu ida ne’e kontein rezultadu xavi hosí peskiza kona-ba maneira setór kafé funsioná iha Timor-Leste. Peskiza ne’e foka ba nivel uma-kain, buka atu komprénde maneira uma-kain produtór kafé atu manejía sira nian produsaun kafé hodi koopera ho merkadu. Peskiza ne’e mós ezamina impaktu sosiál ba uma-kain ne’ebé depende ba kafé hanesan sira nian fonte prinsipál barendimentu.

This report provides a brief and nontechnical overview of the research and main findings and recommendations. More details on various issues touched on in this report are found in related technical papers that are at various stages of completion.

e. Funding
Finansiamentu

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Kontributór no Agradesimentu

Brett Inder (Monash University), David Lloyd (Southern Cross University) and Katy Cornwell (Monash University) were the main investigators named on this AusAID-funded project. Kerrie Stimpson has contributed enormously to the success of the project in many and varied ways as part of her PhD study with Southern Cross University (SCU). Zeferino Tilman (UNTL) has been the leading researcher on the team based in Timor-Leste, and has provided much leadership. Other Australian-based team members include Sumith Pathirana (SCU), Kristin den Exter (SCU), Leon Toh (Monash), Sarah Crouch (Monash), Lisa Walker (Monash) and others.
A large research team undertook the enormous task of visiting more than 800 households twice, to learn firsthand how these households live and engage in coffee production. The survey teams were ably led by Zeferino Tilman, Mateus de Jesus Gomes, Guilhermino da Cruz, Armando B. M. Afonso, Joao Americo. Team members were: Rumao Caetano de Carvalho, Luis da Cruz, Joao Rui Pinto, Mario da Silva Lemos, Sandra Araujo Carvalho, Delfim da Costa, Jose Americo S. Madeira, Sandra X. de Jesus, Apolinario dos Santos Goncalves, Serafim Fernandes, Marcio A. Sanches Pacheco, Joaquim de Fatima Salsinha, Donata Olandina de Araujo.

In addition a number of staff from the Ministry of Agriculture and Fisheries in Timor-Leste undertook training in the use of GPS devices and GIS software.
2 BACKGROUND
ANTESEDENTES

2.1 Timor-Leste

Hatoin independensia, maski dalan sei naruk, Timor-Leste atinji ona susesu barak. Governu Timor-Leste iha komitmentu atu promove dezenvolvimentu no reduz pobreza. Hatoin setór agrikultura sai hanesan Timor-Leste nian atividade ekonomia prinipál no maionia ema pobreza sira involve iha agrikultura, hadl’ak produtividade no sustentabilidade iha setór ne’e sei fó beneficiu ba ema barak. Industria Kafé partikularmente, iha potensia ne’ebé bo’ot ba idane’e.

As a new nation in 2002 following decades of foreign rule, Timor-Leste inherited little functional infrastructure, few operating institutions and widespread poverty. A strong commitment to development in the years that followed has seen notable progress in a range of social indicators, particularly in governance and education. However, despite the commendable achievements, Timor-Leste remains the poorest nation outside of sub-Saharan Africa in measures of multidimensional poverty (UNDP, 2013). Per capita gross domestic product (‘GDP’) is on par with that of Tanzania and Chad (2011 GDP per capita was $1393 in 2005 purchasing power parity) and 37% of the population live on less than US$1.25 per day (UNDP, 2013).

Much of the infrastructure in Timor-Leste is still underdeveloped and a significant proportion of the population does not have access to basic services. It is estimated that 31% of people in Timor-Leste lack access to an improved water source, 61% are without improved sanitation and 82% do not have electricity (UNDP, 2010; WHO, 2013). With among the lowest number of physicians per head of population across the globe, health measures are particularly poor: the average life expectancy is 64 years, the under-five mortality rate is 54 deaths per 1000 live births, and 45% of children under five are underweight – the highest in the world (WHO 2010, 2013).

In recognition of the challenges the nation faces, the government of Timor-Leste has committed itself to promoting development and reducing poverty by fostering economic growth, investing in human capital and infrastructure, and strengthening public institutions (Government of Timor-Leste, 2007; Government of Timor-Leste, 2010a). A core element in the plan for growth is to improve the productivity and sustainability of the agricultural sector.
Agriculture is the country’s main economic activity, constituting the primary source of employment for 84% of the labour force (Ministry of Finance, 2008), amounting to 30% of non-oil GDP and 90% of non-oil exports (World Bank, 2011). As highlighted in the Strategic Development Plan 2011-2030, agriculture has an important role to play in reducing poverty, promoting rural development and assuring Timor-Leste’s food security – both through food production and as a principal source of income for many of the rural poor (Government of Timor-Leste, 2010a; Government of Timor-Leste, 2012; World Bank, 2007).

A key challenge in this plan is that of converting the agricultural sector’s potential to drive growth and poverty reduction into reality. A sensible starting point is to identify those areas within the agricultural sector that offer the greatest opportunities to generate significant welfare improvements for a large number of people. The coffee industry, as a primary employer, and in particular, a large employer of the poor in Timor-Leste, has been identified as having the greatest potential in this regard (World Bank, 2011); for this reason the coffee industry is the focus of this research.

The agricultural sector – and in particular the coffee sector – has the greatest potential to generate significant welfare improvements for a large number of people.

Setór agrikultura – partikularmente setór kafé – iha potensia ne’ebé bo’ot hodi hadi’ak moris-dia ema barak nian.

2.2 The Coffee Sector
Setór Kafé

Aproximadamente uma-kain ¼ iha Timor-Leste, sira nian fonte prinsipál rendimentu mak kafé. Maibe, produsaun kafé ki’ilk tebes – média 21% deit kompara ho pais-sira ne’ebé produz kafé iha Ázia Sudeste no 10% hosi plantasaun kafé – ai-hun seluk mak moris no ai-hun tuan, ai-hun ne’ebé nia tahan buras tebes no taka loron-matan ka hetan infesaun ferrujen no mós pratika kultivasaun ne’ebé ladun diak.

The coffee industry is a central part of Timor-Leste’s economy, society and history, having been a valuable source of employment and foreign exchange within Timor-Leste for over a century. Coffee is the principal source of cash income for approximately one quarter of the nation’s households (UNDP, 2006).

Despite this, Timor-Leste’s coffee landscape is characterised by overgrown and ageing trees, with coffee canopies that have grown too tall to be harvested, and shade trees that have not been pruned and now block too much sunlight or are infected with rust disease and no longer provide shade, impeding coffee yields (Old & Dos Santos...
Cristovao, 2003; UNTAET, 2000). In addition, production lacks industrial effort towards crop cultivation, including weeding, pruning, planting and managing pests and disease (Amaral, 2003). In consequence, the World Bank (2011) estimates that Timor-Leste’s harvests are a mere 21% of the average in other coffee-producing South Asian nations.

Concerted effort towards overcoming the above issues is an obvious way in which the Timor-Leste coffee industry can be developed and expanded. The merits of developing the coffee industry, however, are not unanimously agreed upon: the international coffee market is a market characterised by intense competition and a declining long-term world price (International Coffee Organisation, 2009; World Bank, 2007). Heavy reliance on the coffee industry also renders the nation more vulnerable to price shocks, balance of payments problems and the risk that, by focusing on commodities rather than manufactured goods, the nation is limiting its earning potential (Panitchpakdi, 2010).

Despite the risks associated with the coffee industry, the Timor-Leste government is strongly committed to promoting the sector, and in 2010 held the inaugural International Conference on Coffee in Timor-Leste to discuss ways to increase the quality and quantity of Timor-Leste coffee (Government of Timor-Leste, 2010b).

---

There are two tasks in achieving real poverty-reduction among coffee growing households:

Iha servisu prinsipál rua hodi alkansa redusaun pobreza ba uma-kain produtór kafé:

(1) Improving productivity to increase household incomes. Hadi’ak produtividade hodi hasa’e rendimentuuma-kain.

(2) Ensuring the increases in income are converted into improvements in actual household welfare.

Peskiza ida ne’e foka ba análiza ekonomia hodi haree koneksaun entre atividade produz kafé no uma-kain sira nian moris-diax, buka atu rezolve diretamente problema redusaun.

---

1 Historically the terms of trade for commodities, compared with manufactured goods, have been in decline, and commodities offer fewer opportunities for productivity gains and value-adding (Panitchpakdi, 2010).
Achieving productivity improvements in the coffee industry demands policies that tackle the weaknesses within the sector, including overcoming growers' reluctance to re-plant and prune their coffee and shade trees, developing coffee growing, harvesting and processing expertise, improving local infrastructure, and establishing certification programs and quality standards as part of a coffee marketing program (UNTAET, 2000).

Addressing poverty also requires ensuring that increases in household income as a result of productivity gains are converted into improvements in household welfare. It is often presumed that this will occur automatically, but evidence suggests that is not the case. For example, many coffee growing households in Timor-Leste experience seasonal hunger due to the fact that the bulk of their income is earned during harvest season. It follows that assisting these households to manage the seasonality of their incomes is critical to alleviating poverty.

With its focus on an economic analysis of the connection between coffee growing activities and welfare at the household level, this project seeks to directly address these issues around poverty reduction among coffee growing households. It has the potential to yield insights that can be used to address central development issues in Timor-Leste.

**Peskiza ida ne’e foka ba análiza ekonomia hodi haree koneksaun entre atividade produz kafé no uma-kain sira nian moris-diak, buka atu rezolve diretamente problema redusaun pobreza iha uma-kain produktór kafé. Peskiza ne’e iha potensia hodi rezulta koñesimentu ne’ebé bele uza hodi rezolve problema dezenvolvimentu sentrál iha Timor-Leste.**

---

2 UNDP (2006) suggests that growers are reluctant to rehabilitate their trees because doing so leads to a short-term fall in the amount of coffee the trees produce and thus the amount of income the growers earn. Accordingly, it recommends developing credit policies to smooth out growers’ incomes over this period. Another policy option is to give coffee growers tenure over the land they harvest (or property rights in the coffee trees they use, as in Côte D’Ivoire (Audibert, Brun, Mathonnat & Henry, 2006)) so that they have an incentive to invest in the coffee plantations (UNTAET, 2000; Oxfam, 2003). However, there is the possibility that in practice this recommendation may not be as effective as expected, because the World Bank’s (2001) coffee survey suggests that in Timor-Leste lack of land ownership is not a strong disincentive to working the land.
3 METHODOLOGY

METODOLOJÍA


3.1 Household Survey

While much is known about the workings of the coffee sector in Timor, little is known about how it affects the most vulnerable in the industry, coffee producing households. Most knowledge about coffee producing households is anecdotal and based on limited personal contact and experience. A very important part of this research project is to fill this gap in knowledge by making the household the primary focus of some extensive data collection.

The sample comprises 825 households, with information collected on 5334 individuals. All households were based in Ermera district: it was decided that a large sample from just one district would allow better comparisons across households.

The sample involved choosing a random subset of 4-6 sucos from each of the 5 sub-districts of Ermera, and then sampling approximately 20 households within each suco.

Each household was visited twice in 2011, the first time in February, and the second in August/September, just after the conclusion of the annual coffee harvest.

The focus of the household survey was centred around understanding:

- Coffee producing activities at the household level, and the extent of reliance on income from coffee.
- The impact of seasonal income on household welfare – income, consumption, health (hence the visits twice).

The research was conducted by teams of researchers, comprising staff from the Ministry of Agriculture and UNTL, with staff from Monash University and Southern Cross University in Australia providing overall direction and support.
A copy of the actual survey instrument and data sets of results are available from the authors on request.

Follow-up qualitative interviews of eight households were also conducted in November 2012 to explore further aspects of co-operatives.

3.2 Geographical Information Systems

While household surveys were being conducted, GPS devices were used by the survey enumerators to identify the location of each household. Data was also collected on some local community characteristics.

The location data, alongside the other information collected about each household, allows us to relate locational and spatial characteristics of households and communities to their economic and social outcomes.

Geographical Information Systems (GIS) methods are used to capture the spatial patterns in household outcomes. By drawing on other data sources, we are also able to relate land use to households’ economic and social outcomes.

3.3 Interviews of Key Informants

While the focus of this research is at the household level, it is equally important to understand the wider context of the coffee industry and related training and development, and the way in which the household interacts with them.

Through the course of this research, a number of key informants in the coffee industry have been interviewed. This includes representatives from the Ministry of Agriculture and Fisheries, senior representatives of some specific coffee buyers / processors / exporters, including the Café Cooperative Timor (CCT) and Alternative Trade Timor (ATT), and certain people from various development agencies who focus on agricultural / rural development, including SEEDS for life, World Vision, and others.
4 MAIN RESEARCH FINDINGS
REZULTADU XAVI HOSI PESKIZA

4.1 Coffee Production and Yields
Produsaun Kafé no Kollieta

In this section we will present a brief snapshot of the coffee production and income of growers interviewed in the survey. Data on coffee production was collected from households in the second round of the survey (August-September 2011), and thus relates to the 2011 harvest. Global International Coffee Organisation data for total annual production\(^3\) suggests the 2011 harvest was very similar to the 2007-2009 harvests, but 25-40% lower than production in 2010 and 2012. Accordingly, the survey results will paint a more pessimistic picture of incomes and yields than in the immediate surrounding years.

Surveyed households were asked to report total production in the current harvest, in the form by which they were sold – cherry, parchment, dried bean, etc., as well as the area of land with coffee trees available from which to harvest. Data on yields are constructed from this information. It is important to consider the form in which the coffee is sold, as not only does this impact the sale price and calculation of yield, but it also provides insight into the realisation of the trade-off between identifying quality and storage.\(^4\)

\(^3\) Available at: http://www.ico.org/new_historical.asp.

\(^4\) Our key informants advise us that quality can be determined by plushness of the cherry, however once picked the cherry must be sold within 24 hours. Bean with the cherry flesh removed can be stored, however the quality is not as easily identifiable.
4.1.1 In What Form is Coffee Sold and to Whom?
Kafé ne’ebé Fa’an ho Forma saida no Fa’an ba Se?

Kafé kulit tasak mak forma ida ne’ebé predominante wainhira uma-kain fa’an sira nian kafé (68% hosí uma-kain) no maioria uma-kain hirak ne’e fa’an sira nian kafé ho forma kulit tasak duke prosesa ba hasai kulit ka habai maran (hosí uma-kain hirak ne’ebé mak fa’an kafé kulit tasak, 64% eskluzivamente fa’an kafé kulit tasak).

Cherry is the predominant form in which households sell their coffee (68% of households), and a large proportion of these households sold their coffee solely as cherry rather than processed parchment or dried bean (of those who sold cherry, 64% sold exclusively cherry).

The vast majority of cherry sales were to CCT (around 81%), while virtually all parchment sales were to other major companies (e.g. Timor Corp, Timor Global and Elsaa Café). This reflects the dominance of CCT in the coffee industry in Ermera District.

4.1.2 What Price Did they Receive?
Sira Hetan Presu Hira?

Kafé kulit tasak maioria fa’an ba 50 sentimu per kilograma, kafé hasai kulit la habai maran fa’an kuaze besik $2.00 per kilograma. Ida ne’e reprezenta taxa returnu ne’ebé ki’ik hosí fa’an kafé kulit tasak.

Producers report a range of prices for their coffee. Cherry sold mostly for 50 cents per kilogram, with some variation – prices falling as low as 20 cents, and going as high as $1.00 per kilogram. Prices are very similar across buyers (CCT, others), and varied little throughout the season. Parchment sold for an average of almost $2.00 per kilogram. Notably, this represents a lower rate of return than selling cherry, assuming 5kg of cherry is needed to produce 1kg of parchment. This is despite the extra work involved in processing cherry to parchment.

Why would a producer bother with processing to parchment when on average, a better return is available from cherry? Some argue that households often have no choice, as the cherry needs to be sold within 24 hours of being picked, and lack of access to buyers is often an impediment to selling cherry. Others argue that when the quality of the cherry was poor (e.g. unripe, diseased), buyers reject the product and the producer has no choice but to process to parchment.
Figure 1 lends support to the argument that the choice to process cherry to parchment is primarily driven by timely access to market. It shows that early in the season most coffee is sold as cherry, but as the season progresses, more is sold as processed product. With the need to sell cherry within 24 hours of it being picked, the late-season sales are quite likely product which was harvested earlier, and could not be sold at the time due to lack of access to the market.

FIGURE 1
Month Coffee Income Earned by Coffee Form
Rendiméntu Kafé Mensál ne’ebé hetan hosí Formá Kafé

Early in the season most coffee is sold as cherry, but as the season progresses, more is sold as processed product. This suggests the choice to process cherry to parchment is primarily driven by timely access to market.

Iha inisiu tempu, maioria kafé fa’an ho kulit tasak maibe iha tempu klaran, maioria fa’an atravez prosesamentu. Ida ne’e hatudu katak opsaun hodi prosesa kaf’e kulit tasak to’o hasai kulit mak prinsipálmente bele asesu ba merkadu.
When the survey participants were asked about their choice of form, we find that the choice between selling as cherry or parchment seems to have little to do with price—less than 1% of producers identified price as factor. It is revealing that the most common response had little to do with maximising return on the harvest or lack of access to buyers. Instead, buyers mostly referred to financial constraints: 62% reported selling coffee as cherry because they needed the money quickly to cover basic essentials.

Wainhira iha survei, ami husu mós ba partisipante sira kona-ba opsaun ba forma kafé, ami identifika katak opsaun entre fa’an kafé ho kondisaun kulit tasak ka hasai kulit senti iha relasaun ne’ebé ki’ik ho presu kafé—uma-kain menus hosí 1% mak identifika presu hanesan fatór ida. Ida ne’e hatudu katak resposta ne’ebé komún liu, iha relasaun ne’ebé ki’ik ho maximiza retornu iha kolieta ka menus asesu ba kompradór: problema finanseiru: uma-kain 62% mak relata katak sira faan kafé ho kondisaun kulit tasak tan problema finanseiru – sira presiza osan urjenti atu hola nesesidade baziku.

**SUMMARY BOX 1**

**Cherry or Parchment?**

The best possible returns to growers can be achieved by a network of locally operated processing facilities that are accessible to growers, with shared ownership in a co-operative set-up, and where there is sufficient local expertise to ensure consistency of quality.

Posibilidade returnu ne’ebé diak ba produtór kafé bele atinji atravez liña servisu hosí fasilidade prosesamentu lokál ne’ebé mak asesível ba produtór sira, fahe proprieridade ho kooperativa no wainhira iha rekursu umanu lokál hodi asegura konsistensia ba kualidade.
4.1.3 What Volumes Did Households Sell?

Volume Kafé Hirak mak Uma-Kain Faan?

Pratikmente, uma-kain sira faan kafé 750kg ka menus, ekivalente ho kafé hasai kulit la habai maran (Forma kafé hotu-hotu fa’an durante periodu kollieta – kulit tasak, hasai kulit no kulit maran – konverta ba kilograma hosi sira nia ekivalente iha forma kafé hasai kulit la habai maran) no uma-kain 67% faan 100kg ka menus hosi ida ne’e.

Figure 2 shows the distribution of volume of parchment-equivalent – that is, coffee sales from all forms of coffee sold over the harvest season (cherry, parchment, dried bean) converted to kilograms of their equivalent in parchment form. The data is concentrated in the very low levels, with 98% of households selling 750kg or less, and 67% 100kg or less. At an average price of $2-$2.50 per kilogram, this represents very low levels of annual income for the vast majority of households – two-thirds of these households earned $250 or less from their annual coffee harvest.

FIGURE 2
Coffee Volumes Sold
Volume Kafé ne’ebé Faan

% of Households

The vast majority of households sell small volumes of coffee, and earn very low incomes from the annual harvest.

Maioria uma-kain faan kafé ho volume ne’ebé kii’ik, no hetan rendimentu ne’ebé kii’ik hosi sira nia kollieta anuál.
Other sources of income such as that from paid labour employment, running a business and the sale of crops other than coffee does not substantially boost average household incomes – more than half of the households surveyed rely on coffee for the majority of their income, with coffee comprising an average 53% of household income across the survey. This concentrated reliance on one volatile commodity leaves households vulnerable.

4.1.4 What Yields were Achieved?

*Média kollieta ba uma-kain sira mak 204kg/ha, kuaze 20% hosi média iha rejiaun produtór kafé n’ebé ki’ik no 10% atinji hosi plantasaun kafé.*

Combining estimated land area used for coffee trees with household production data, we are able to estimate yields per hectare for households.

Figure 3 shows the distribution of total household coffee yields in kilograms of parchment-equivalent per hectare. The message from this data is one of very low yields by international standards: the average yield for these households is 204kgs/ha, around 20% of average in the region for smallholder coffee (World Bank, 2011), and 10% of that typically achieved with plantation coffee. This average is actually made higher by a few households with very good yields; for the majority, yields are much lower than the 204kgs/ha average – for example, around 60% of households have yields of less than 100kgs/ha.
Previous studies have sought to identify causes for Timor-Leste’s characteristic low yields, noting a high prevalence of old and unproductive trees (covering more than 50% of the land area), and poor practices around caring for trees and land (Ministry of Agriculture and Fisheries, 2009). Regarding the economic implications of such low yields, the message is clear: households are receiving very low incomes from coffee, but there is potential for significant improvements in income by strategies aimed at improving yields.
Has Anything Been Done to Improve Yields?

Uma-kain 14% mak relata tuir treinamentu iha tinan 4 liu ba, maioria hosi CCT.

The discussion so far leads us to the obvious question about what efforts are currently taking place to improve yields. Indeed there is much happening to this end through activities of various parties – the Ministry of Agriculture and Fisheries, various coffee processing companies and NGOs. The survey allows us to identify perceptions of training from the point of view of coffee producing households – are they receiving training, in what areas, and is it making a difference?

In the sample of households, 14% reported receiving training in the previous four years, which is a surprisingly low figure considering Ermera is perceived as one of the more well-supported coffee producing districts. More than half of these households report that their training came from CCT, with 35% coming from Ministry of Agriculture and Fisheries staff. Training was reported to be mainly around pruning, dealing with disease, and rehabilitation and rejuvenation of coffee trees.
4.1.6 Did Training Make a Difference to Yield?
Treinamentu ne’e Fó Diferensia Ruma iha Kollieta ka Lae?

Hosi uma-kain ne’ebé tuir treinamentu, 77% informa katak sira koko pratika koñesimentu foun ne’ebé hetan hosí treinamentu ne’e no 83% hosí sira informa katak hafoin ne’e, sira nia kollieta rezulta diak. Maibe, montante melloramentu iha kollieta ki‘ik tebes: média 6%.

Of those who received training, 77% say they tried new practices as a result of the training, and in turn, 83% of these reported improved yields as a result. So the perception of farmers is that once they take up training opportunities, they do bring benefits.

Of course, perceptions are not always accurate, so another window into the benefits of training is to compare yields for households that have received training with those who have not. Those who reported taking part in training have yields per hectare which are 6% higher on average. This is a strikingly low figure, made worse by the likely bias caused by the non-random selection of who undertakes training. Typically, those who commit to training are more dedicated to their productive activities; such higher level of commitment means they would be expected to have higher average yields than those who do not pursue training opportunities, even before the benefits of training are experienced. So the 6% difference in yields is most likely to overstate the yield benefits of training per se.

SUMMARY BOX 3
Improving Yields
Hadi’ak Kollieta

While there is scope for very large improvements in coffee yields and production, current approaches to training have little reach and impact. New approaches to engaging coffee producers in improving their yields are needed.

Maski iha espasu ne’ebé bo’ot hodi hadi’ak produsaun kafé no kollieta, aproximasaun foun hodi involve produtór kafé hodi hadi’ak sira nia kollieta, nesesariu tebes.
4.2 Poverty and Coffee Production
Pobreza no Produsaun Kafé

The results reported to this point suggest that coffee producing households live with very low yields, and ultimately receive very low incomes as a result of their coffee-producing activities. In this section we look to paint a broader picture of the lives of a typical household in our sample. While they may have low incomes from coffee, are there other more substantial income sources? What kinds of assets and resources do households have access to?

4.2.1 Household Assets and Wealth
Uma-kain nian Material no Rikeza

Table 1 summarises the main results in the survey around the wealth situation of households – the kinds of amenities they have access to, the types of dwellings they live in, and what assets they own. This paints a rather dismal picture of the quality of housing, access to basic facilities and wealth of households.
TABLE 1
Quality of Housing, Use of Basic Facilities and Asset Ownership among Households
Kualidade Uma, Uza Fasilidade Baziku no Nain ba Proprieridade entre Uma-kain

<table>
<thead>
<tr>
<th>Toilet Type</th>
<th>% Households</th>
<th>Main Wall Material of House</th>
<th>% Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private traditional latrine</td>
<td>48 %</td>
<td>Palm, bamboo, rattan, wood</td>
<td>35 %</td>
</tr>
<tr>
<td>Private flush toilet</td>
<td>28 %</td>
<td>Corrugated iron, tin</td>
<td>32 %</td>
</tr>
<tr>
<td>Public/shared toilet (flush or traditional)</td>
<td>7 %</td>
<td>Concrete, brick</td>
<td>28 %</td>
</tr>
<tr>
<td>No toilet (open defecation)</td>
<td>17 %</td>
<td>Other</td>
<td>6 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lighting Source</th>
<th>% Households</th>
<th>Physical Assets Owned</th>
<th>% Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil/kerosene lantern, candles</td>
<td>57 %</td>
<td>Mobile phone</td>
<td>46 %</td>
</tr>
<tr>
<td>Electricity, including privately-generated</td>
<td>30 %</td>
<td>Radio</td>
<td>32 %</td>
</tr>
<tr>
<td>Other, e.g. solar cell</td>
<td>13 %</td>
<td>TV</td>
<td>13 %</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Motorbike</td>
<td>7 %</td>
</tr>
<tr>
<td>Water Source</td>
<td></td>
<td>Farm equipment</td>
<td>4 %</td>
</tr>
<tr>
<td>Natural source (spring, river, lake)</td>
<td>47 %</td>
<td>Car</td>
<td>1 %</td>
</tr>
<tr>
<td>Public tap/well</td>
<td>33 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private tap/well</td>
<td>20 %</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Livestock Owned</th>
<th>if Owned, Average Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pig</td>
<td>71 %, 2.0</td>
</tr>
<tr>
<td>Chicken</td>
<td>67 %, 4.5</td>
</tr>
<tr>
<td>Cow</td>
<td>31 %, 2.3</td>
</tr>
<tr>
<td>Goat/sheep</td>
<td>17 %, 2.0</td>
</tr>
<tr>
<td>Horse</td>
<td>9 %, 1.3</td>
</tr>
</tbody>
</table>

Most coffee-growing households have low quality housing, lack access to basic facilities and own few physical assets or livestock.

Nota, uma-kain hirak mak moris iha uma ne’ebé nia kualidade át tebes no menus fasilidade – menus hosí 30% mak hela iha uma ne’ebé harii ho tijolu ne’ebé forte ka iha eletrisidade no ituan deit mak hetan asesu ba bee-moos.

Nota, uma-kain sira iha proprieridade balun ne’ebé fasilidade baziku no komunikasaun, ho eksepsaun ba prevalénsia telefone ne’ebé relativamente ás (46%).

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Nota, uma-kain sira iha proprieridade balun ne’ebé fasilidade baziku no komunikasaun, ho eksepsaun ba prevalénsia telefone ne’ebé relativamente ás (46%).

Iha númeru ne’ebé razoavel ba uma-kain balun ne’ebé hakialk animal moris, mälbe jeralmente, númeru ne’e ki’ik tebes no oportunidade ba moris ki’ik tebes hosí nivel proprieridade ki’ik hirak ne’e.
4.2.2 Other Sources of Income
Fonte Rendimentu sira Seluk

On the income side, it is first interesting to note the level of reliance on coffee income as the households’ main source of income. Figure 4 shows that about 27% of households report that virtually all their income is from coffee; of the remaining households, there is quite a variation in the extent to which households rely on coffee income, but most households rely on coffee for the majority of their income.

![Figure 4: Proportion of Income from Coffee](image)

**FIGURE 4**
Proportion of Income from Coffee
Proporsaun Rendimentu hosí Kafé

<table>
<thead>
<tr>
<th>% of Households</th>
<th>0-10%</th>
<th>11-20%</th>
<th>21-30%</th>
<th>31-40%</th>
<th>41-50%</th>
<th>51-60%</th>
<th>61-70%</th>
<th>71-80%</th>
<th>81-90%</th>
<th>91-100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>40%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35%</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30%</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25%</td>
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<td></td>
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<td></td>
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<td></td>
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<tr>
<td>20%</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15%</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10%</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Most households rely on coffee for the majority of their income. Maioria uma-kain depende ba kafé nu’udar sira nian rendimentu prinsipál.

Figure 5 shows how the mix of income sources varies as total income varies. Households have been divided into 10 groups, from the 10% with lowest income to the 10% with highest income. For each group, each bar shows how their total income is divided between coffee income, labour income, income from crops and from livestock.
Households with higher incomes achieve them through labour income.

Maioria uma-kain sira nian proporsaun totál rendimentu bo’ot liu mai hosi Kafé.

Proporsaun rendimentu hosi kafé mak ki’ik tebes ba sira ne’ebé ho totál rendimentu ne’ebé ás.

Maski fahe rendimentu hosi kafé tun no rendimentu sa’e, montante rendimentu ne’ebé hetan hosi kafé jeralmente sa’e. Fahe rendimentu hosi kafé tun tan fonte rendimentu sira seluk sa’e iha nivel ida ne’ebé lais duke rendimentu hosi kafé.

Rendimentu hosi kollieta mak ki’ik tebes iha nivel rendimentu hotu-hotu.

Rendimentu hosi hakia animal mós relativamente ki’ik, hahu hosi 5% totál rendimentu ba ema mukit sa’e ba 30% hosi total rendimentu iha nivel ne’ebé ás liu.

Ida ne’e hatudu katak uma-kain ne’ebé ladun ki’ak bele atinji rendimentu ne’ebé ás hosi sira nian salariumsás – kna’ar hanesan mestre, kondutór, guarda sivil nosst.
Putting all this together, virtually no household is earning high incomes as a result of coffee. Coffee is a poor person's income source. Any who are earning relatively large total income (although mostly still small by Dili standards) are doing so by virtue of some other form of labour income / employment, or possibly diversification into other agricultural income, particularly livestock.

SUMMARY BOX 4
Income Sources apart from Coffee
Fonte Rendimentu aleinde hosi kafé

In the current rural economy, almost the only viable path out of extreme poverty is to find non-agricultural labour income.

Dadaun ne’e iha ekonomia rurál, dalan atu elimina ki'ak mak buka rendimentu hosi servisu naun-agrikultura.

4.3 Household Welfare and Food Security
Uma-Kain nian Moris-Diak no Seguransa Ai-Han

Households which rely on coffee as their primary income source face the additional difficulty of experiencing a high degree of seasonality in their income, deriving from the annual coffee harvest. Comparisons of survey responses in August (the end of harvest time) with the same responses for February allow us to identify the extent to which this seasonality of income affects the welfare of members of the household.

Uma-kain sira ne’ebé depende ba kafé hanesan fonte prinsipál ba sira nian rendimentu, esperiensia hetan sira nian rendimentu ne’ebé bo’ot bazeia ba tempu kollieta deit.
4.3.1 Seasonal Effects on Food Consumption  
Impaktu Tempu ba Konsumsaun Ai-Han

Survei hatudu evidensia ne’ebé klaru kona-ba balansu konsumsaun baziea ba tempu. Iha Febreiru, kada loron uma-kain 50% konsume hahan ida ka menus. Iha Agustu, 21% deit mak konsume ai-han ho númeru ne’ebé ki’ik. Ida nee afeita ba uma-kain sira nia moris-diak: iha Febreiru, pesóál 6.6% mak falta ba sira nia atividade lor-loron, razaun tan kondisaun saúde ladiak, maibe iha fulan Agustu, iha deit 1.5%.

How well do coffee producing households smooth their consumption throughout the year? Are there times of the year where, because of lack of funds, their access to food and other essentials is much lower than at other times? The survey provides clear evidence of uneven consumption. Because the survey was undertaken twice, we are able to compare food consumption across these two periods. Table 2 shows the number of meals each household consumed at the two times of the year. Numbers on the diagonal represent the households who consumed similar amounts in the two periods, while values above the diagonal represent households who consumed more in the harvest period than in February.

First consider the level of food consumption in the two time periods. Looking at the last column of the Table, we see that 50% of households had an average of one meal or less per day in February. Contrast this with August, where just over 21% had this small number of meals. Looking at the values off the diagonals, some 45% of households consumed fewer meals or smaller meals each day in February than in August.

Not surprisingly, this disparity in food consumption leads to other welfare effects on household members: for example, in the February round, 6.6% of individuals were absent from their daily activities due to poor health, while in August this rate was only 1.5%.
### TABLE 2
**Average Number of Meals per Day, Last 4 Weeks**

Média Númeru Ai-Han kada Loron, Semana 4 Ikus

<table>
<thead>
<tr>
<th>Meals per Day in February (Round 1)</th>
<th>0.5 meal</th>
<th>1 meal</th>
<th>2 meals</th>
<th>3 meals</th>
<th>Total Number of Households</th>
<th>% Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5 meal</td>
<td>1</td>
<td>2</td>
<td>13</td>
<td>4</td>
<td>20</td>
<td>3 %</td>
</tr>
<tr>
<td>1 meal</td>
<td>1</td>
<td>100</td>
<td>179</td>
<td>54</td>
<td>334</td>
<td>47 %</td>
</tr>
<tr>
<td>2 meals</td>
<td>1</td>
<td>37</td>
<td>150</td>
<td>68</td>
<td>256</td>
<td>36 %</td>
</tr>
<tr>
<td>3 meals</td>
<td>0</td>
<td>10</td>
<td>44</td>
<td>46</td>
<td>100</td>
<td>14 %</td>
</tr>
<tr>
<td>Total Number of Households</td>
<td>3</td>
<td>149</td>
<td>386</td>
<td>172</td>
<td>710</td>
<td></td>
</tr>
<tr>
<td>% Households</td>
<td>0.4 %</td>
<td>21 %</td>
<td>54 %</td>
<td>24 %</td>
<td>100 %</td>
<td></td>
</tr>
</tbody>
</table>

#### Proportion of households consuming:
Proporsaun konsumsaun hosini uma-kain:

- The same number of meals regardless of season: 42 %
- More in harvest season: 45 %

In the non-harvest season 50 % of households ate 1 meal or less per day, on average. In the harvest season only 21.4 % ate this small amount.

Iha Febreiru, kada loron uma-kain 50% konsume hahan 1 ka menus. Iha Agustu, 21% deit mak konsume ai-han ho númeru ne’ebé ki’il.

#### 4.3.3 Seasonal Effects on School-Aged Children
Impaktu Tempu ba Eskola-Oan Sira

In the harvest season, it is common for school-aged children to help with the family’s coffee harvest. Even though part of the harvest period is covered by annual school holidays, 44% of secondary school children who helped with the harvest did so during school time. This represents a substantial disruption to the education of these children.

Weather plays another strong part in access to schooling for many rural children – in the rainy season of round 1, bad weather was a common reason for school absence.
Tempu mós afeitadu ba eskola-oan sira nian edukasaun: iha tempu kollieta, labarik eskola primária 44% mak ajuda kollieta durante tempu eskola. Iha tempu udan, iklima ne’ebé ladiak mak hanesan razaun ida ne’ebé komún liu atu falta eskola.

**SUMMARY BOX 5**
Seasonal Hunger
Tempu menus Ai-han

The evidence is strong for the existence of ‘hungry months’ where households consume much less than at other times of the year, because of financial constraints. This has sizeable welfare implications, especially for children.

Evidensia ba ezistensia ‘bulan lapar’ forte tebes, ne’ebé uma-kain sira konsume ai-han menus liu kompara ho tempu sira seluk iha tinan ida nia laran, tan problema finanseiru. Ida ne’e fó implikasaun bo’ot ba uma-kain sira nia moris-diaak, liu-liu ba labarik-oan sira.

**4.3.4 Smoothing Income and Consumption**
Konsumsaun no Rendimentu ne’ebé Sustentável

Why don’t households save their harvest income to spread it more evenly across the year?
Tan sá mak uma-kain sira la-poupa sira nia rendimentu hosí kollieta no uza durante tinan ne’e nia laran?

There is a great deal of research in economics into the question of consumption smoothing: when income is not received steadily across a year, households develop strategies for spreading this income out so that consumption expenditure (especially on food and other essential non-durables) is more evenly spread across the year. The challenge of dealing with lumpy income is particularly strong in households that depend on one main crop like coffee for their income, and in particular where that crop has just an annual harvest.
Savings?
Poupansa?

The most obvious mechanism for consumption smoothing is the use of savings and borrowings to redistribute income across time. In a relatively poorly developed financial system such as Timor-Leste’s (especially in rural areas), it is the widely held view that saving and borrowing is not as common as in other parts of the world, not least because there is very little access to formal financial institutions. Our survey actually suggests a significant level of savings, indicating that there is a culture of saving, although not as widespread as one might expect given the temporal distribution of income. When asked in February whether households had saved income earned in the previous harvest, almost 40% indicated that they had saved some of the income. The vast majority of this income was then spent in the December / January / February period, some 4-6 months after harvest. While this indicates a nontrivial degree of savings, it still means that more than 60% of households did not save their harvest income at all. Furthermore, the amounts that were saved were typically quite low, mostly less than $50.

Borrowings?
Impréstimu?

Do households instead rely on borrowings to meet their consumption needs? When asked in February if they had borrowed in recent weeks, more than 50% indicated that they had, with borrowings typically in the $50-$100 range. Almost 70% borrowed from friends or family, with less than 4% making use of formal lending institutions. Most borrowings were said to be used for essential needs including food and schooling costs.

Two basic messages emerge from the analysis of savings and borrowings:
Mensajem baziku rua ne’ebé mosu hosi análiza ba poupansa no impréstimu:

- There is a significant amount of saving and borrowing, indicating that despite the lack of formal institutions, many households are resourceful in finding means of redistributing income across the months of the year.

  Iha montante poupansa no impréstimu ne’ebé signifikante, indika katak maski menus instituisaun formál, uma-kain barak iha idea ne’ebé diak hodi re-distribui sira nia rendimentu iha tinan ida nia laran.

- Saving and borrowing through these existing informal means is insufficient to be able to adequately smooth consumption.

  Poupansa no impréstimu atravæ meius informál hirak ne’e, ladun sufisiente hodi halo konsumsaun diak liu tan.
One possible means of improving the capacity of households to spread their consumption expenditure is by providing a structured or formal means by which they can spread their income. For example, in some contexts a coffee buyer may be able to act as a form of savings institution by staggering payments for the product, rather than having one upfront payment for coffee. In this survey we asked households whether they would be interested in such a scheme, and if not, why not. The responses here give some insight into how they view their coffee income and the need to save for future consumption.

An overwhelming 96% of respondents indicated that they would not like their payments for coffee to be paid in instalments. The reasons given are quite revealing: a significant number considered that their income from coffee sales was so small that they needed it all immediately simply to cover the costs of daily living in the near future. If income is already at or below subsistence level, it is hard to find a way to justify saving. For a number of others, the question of delaying payment seemed to be a non-question: they are accustomed to living in an economic system based on a simple exchange model: money is given in exchange for goods at that point.

One of the issues with payment by instalments is that of trust: how will I know that you will honour your commitment to make future payments? The research uncovered a variation on the instalments model that is currently practiced by an NGO amongst its member households. The model involves assessing in February what the likely harvest will be for a given household. A partial payment is made for that coffee at that time. The remaining payment is made at harvest time when the coffee actually changes hands. Under this model, the risk is with the buyer, rather than the household. The buyer is more able to diversify this risk, so it makes sense for them to carry it rather than the household. The scaling-up of this model would seem worthy of consideration.

**SUMMARY BOX 6**  
*Creative Approaches to Saving and Borrowing*

*Uma-kain mukit iha rurál presiza meius ne’ebé asesivel ba poupansa no impréstimu ne’ebé harii hosi relasaun fiar malu.*
In an ideal setting, a rational economic agent would achieve maximum utility by smoothing consumption of food across the year as much as possible. The evidence is clear that households are not doing this. Does this suggest they are irrational, displaying poor ability to plan or show foresight?

Rather than dismiss this behaviour as a sign of poor abilities to plan, we are seeking in this research to understand the possible reasons why households behave in this way. This understanding will help ensure that solutions are consistent with how rural households view their situation, and therefore more likely to be more effective. This is the subject of some more detailed academic analysis as part of this project. We summarise some of this research here.

Some possibly rational reasons for why consumption is not smooth:

- The survey responses suggest that in many cases the income received at harvest time is so low that it barely allows households to reach a subsistence level of food consumption in the immediate future; it is just not enough to be able to consider saving.

- Some of the windfall gain from harvest income is spent on community celebrations. From an outsider’s point of view these can be seen as wasteful, when only months later the household cannot meet their basic food needs. However, there is evidence that community celebrations help to build community loyalty and social capital, that will benefit households later when they need the support of their family and neighbours.

- While it is not desirable to live with less food than one would like for a portion of the year, there is little evidence of people actually starving in the hungry months. The actual experience of rural people is that they have the resources in their families and communities to survive the hungry months. The fact that they somehow they get by in the hungry periods means they are thus less worried than outsiders perceive they ought to be.

- The survey has uncovered a systematic ‘anchoring’ bias in subjects’ recall of how much food they actually consumed at other times of the year. When asked at harvest time (with relatively good income and food supply), about 50% of households recall their non-harvest food consumption as being different to what they reported at the time. In 95% of these cases, their recall error / bias is in the direction of their actual reported consumption in the present (harvest) time. More specifically, many households’ recall of the hungry periods is that things were better than what they actually were. If this is the case, they will presumably have a similar expectation of future hungry periods and not save to the level required for consumption to be kept at a consistent level.

This point is illustrated in a different way with the data in Table 3. Both columns relate to the average number of meals per day households reported consuming in February 2011 (non-harvest time), but at different survey rounds: the first column as reported at the time in February (non-harvest, reproduced from Table 2); the second column as remembered in round 2 (harvest time). Comparing these two columns, the recall at harvest time(column 2) paints a far more optimistic picture of how much food was consumed in February compared with the actual responses given at the time (column 1). This insight into producers’ understanding of their situation across time suggests that simply providing better financial institutions to enable savings and borrowing is not going to be sufficient to help households better smooth consumption across the year.
TABLE 3
Average Number of Meals per Day in February

<table>
<thead>
<tr>
<th>% of Households</th>
<th>As Reported in Round 1 (February, Non-Harvest) from Table 2</th>
<th>As Remembered in Round 2 (Harvest)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5 meal</td>
<td>3%</td>
<td>5 %</td>
</tr>
<tr>
<td>1 meal</td>
<td>47%</td>
<td>33 %</td>
</tr>
<tr>
<td>2 meals</td>
<td>36%</td>
<td>53 %</td>
</tr>
<tr>
<td>3 meals</td>
<td>14%</td>
<td>9 %</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100 %</td>
</tr>
</tbody>
</table>

Column 1 shows that 50% of people reported 1 or less meals per day in February, but column 2 shows this significantly lower at 38% when recall is ‘anchored’ to the experience at harvest time.

SUMMARY BOX 7
How to Best Support Households’ Consumption Decisions across Time?
Dalan Diak atu Fó Apoiu ba Desizaun Konsumsaun Uma-Kain iha Tinan ida nia Laran?

The most effective next step to enabling households to smooth consumption is for households to see a significant increase in harvest income that meets immediate needs and allows them to save.

Faze tuir mai ne’ebé efetivu liu hodi garante uma-kain sira halo konsumsaun ho diak mak uma-kain sira presiza atu haree aumentu ne’ebé signifikante iha rendimentu hosì kollieta ne’ebé bele atende sira nia nesesidade imediata no permite sira halo poupansa.

Alongside this increased income, saving is best facilitated by providing a means of staggering the payments for coffee. Partial pre-payment for a portion of coffee harvest is the most viable existing model, forming part of the activities of a trusted, well-functioning local co-operative.

Aleinde iha aumentu ba rendimentu ida ne’e, poupansa mak meius ida ne’ebé diak hodi halo pagamentu ba kafé. Pagamentu sorin balun ba kollieta kafé sorin balun, hanesan modelu diak ida ne’ebé dadaun ne’e eziste, forma hosì atividade kooperativa lokál ne’ebé fiar-malu.
4.4 Rice and Price

Because of its focus on coffee production and its impact on households, this survey considers only a few of the many important food security issues. We did, however, focus on one important question around access to basic food needs that initial research highlighted as a concern to many households.

The survey collected information on the price that households paid for rice in both rounds of the survey – rice is the most commonly used source of basic nutrition. While official (Direcção Nacional de Estatística – ‘DNE’) data sources provide very good information on prices of rice and other basic foods, these are Dili-based. Prices in rural areas can differ, and often in rural areas rice is purchased in much smaller quantities than a sack, particularly when households are credit constrained. The data collected in this project showed that rice prices (when bought by the 25kg sack) averaged around 68 – 78 cents per kilogram with the following important variations (Figure 6):

Presu foos (wainhira sosa saka 25kg) nia média kuaze sentimu 68 – 78 per kilograma, maibe (Figure 6):

- Households report paying an average of $2.50 (10 cents per kilogram) more for their sacks of rice in February than in August (see Figure 6a). This difference is not reflected in the Dili market prices, so it is not immediately obvious why such a difference would occur. The most plausible explanation is to do with high transportation costs and stock wastage in the wet season (February).

- It is common for households to purchase rice in small tins weighing less than 1kg. Rice purchased this way costs 30-40 cents per kilogram more than the sack price (a 50% price mark-up, see Figure 6b). As a consequence, those who are credit constrained pay significantly more for their rice.
Households pay on average $2.50 more for their sacks of rice in February than in September.

Uma-kain sira sosa foos saka ida iha média $2.50 ka liu, iha fulan Febreiru duke Setembru.

Households pay around 50% more for their rice if purchased by the can rather than by the sack.

Uma-kain sira sosa sira nian foos karun liu 50%, se karik sira sosa ho lata duke saka.
This finding suggests that the rice market adds considerable extra burden on households’ budgets in the non-harvest season, showing up in higher prices for rice per sack, plus a price premium for purchasing rice in smaller quantities. In other words, the majority of households are paying substantially more for their rice at the time when they are most short of income. It is not surprising that we then observe significantly lower food consumption in this period, a contributing factor to the high levels of malnutrition in rural areas.

The majority of households are paying substantially more for their rice at the time when they are most short of income.

There are two price premiums: higher prices in the non-harvest season, plus higher prices for small-quantity purchases.

Maioria uma-kain sira, substansialmente sosa barak liu ba sira nia foos iha tempu ne’ebé sira nian rendimentu ituan liu.

Iha presu prémiu 2: presu ás iha tempu laos-kollieta no presu ás wainhira sosa ho kuantidade ne’ebé ki’ik.

SUMMARY BOX 8
Improving Local Buying Power
Hadi’ak Podér Kompradór Lokál

Co-operation at the local level in buying and transporting food will allow poor rural households to avoid paying higher prices for essential food items.

Kooperasaun iha nivel lokál hodí sosa no transporte ai-han sei permite uma-kain mukit iha área rurál hodí evita sira selu presu ne’ebé ás ba ai-han esensiál.
5 DISCUSSION AND FUTURE ACTION

In this section we discuss some implications of the research findings for policy and future action. Addressing rural poverty in Timor-Leste will require a multi-prong focus, which we categorise into three broad areas: (I) strengthening the role of the coffee sector in poverty reduction, (II) diversification into other agricultural activities and (III) increasing opportunities for labour employment. We will mainly emphasise the place of the coffee industry in poverty reduction, and suggest some ways forward in improving the productivity and welfare of those in the coffee sector. We will advocate a holistic approach that involves increasing yields, providing financial services, establishing pro-poor seasonal programs and improving access to basic foods. This section will conclude with some brief comments about the other areas of agricultural diversification and labour employment.

(I) STRENGTHENING THE ROLE OF THE COFFEE SECTOR

Rendimentu hosi kafé mak xavi ba uma-kain mukit sira nian moris-diak no iha potensia ne’ebé bo’ot hodi hasa’e sira nian rendimentu atravez hadi’ak kollieta. Iha kurtu no médiu prazu, investimentu hodi fó apoiu ba atividade kafé ne’ebé dadaun ne’e eziste, sei produz returnu ne’ebé efikaz duke esforsu hodi kria oportunidade ekonomia foun.

It is argued in some quarters that reliance on a cash crop like coffee will never provide sufficient income to allow households to move out of poverty. Critics also point to vulnerability of households to global market conditions and prices, and to an over-reliance on global cash crop income at the expense of productions for local and own-consumption.

While such arguments might have appeal at an ideological level, the evidence in this research is that they do not hold at a practical level. First, coffee income is vital to households’ immediate wellbeing, providing the vast majority of cash income, especially for poorer households. Even very poor / subsistence households find cash is vital for providing basic needs, for supporting schooling and health, and for

A large proportion of the poor can be reached through a holistic approach to strengthening the coffee sector.

Fortalesimentu setór kafé atravez aprosimasaun olistiku ida bele alkansa númeru populasaun pobreza ne’ebé bo’ot.
creating access to markets and other income sources. Secondly, the results have shown that there is great potential for increasing income through improved yields. In the short and medium term, providing greater support for the existing coffee activities will produce a much more effective, timely and broad-based return than attempts to create whole new economic opportunities.

Here we suggest some creative approaches to improving coffee income as a means by which to reduce poverty.

5.1 Improving Coffee Yields

Hadi’ak Kollieta Kafé

This research has highlighted that coffee yields are very low by international standards. An average yield of around 200kg of parchment per hectare is around 10% of that of many other coffee producing countries. There is clearly very large scope to increase incomes by improving yields of high quality coffee. In turn, evidence suggests that increasing incomes will indeed make a sizeable difference to household welfare – health and education of children, for example.

The Timor-Leste Strategic Development Plan 2011-2030 discusses a broad approach to rural development, focusing on improved food security and increasing income. This will be achieved by sizeable improvements in production of basic foods such as rice and maize, as well as significant increases in yields for cash crops like coffee. The strategy with cash crops relies primarily on training and expert advice – it is summarised as follows (p. 128): “Farmers will be offered subsidies, training and expert advice … to ensure that the expansion of the cash crops sector over the next 20 years contributes to Timor-Leste’s goal of food security and creating jobs in rural areas”. The key words in this sentence that form the basis of a plan for action are subsidies, training and expert advice. We will advocate for creative and new approaches, arguing that more of the status quo is not able to deliver the kinds of improvements needed.

Dadaun ne’e, bazeia ba padraun internasonál, kollieta kafé iha deit 10-20%. Klaru katak iha oportunidade ne’ebé bo’ot hodi hasa’e rendimentu ba ema barak atravé hadi’ak kollieta kafé ne’ebé iha kualidade diak. Estratéjia sei inklui subsidiu treinamentu no konsellu hosí téñiku ka espesialista sira.
5.1.1 Creative Approaches to Training and Expert Advice  
Aproximasaun Kreativu ba Treinamentu no Konsellu hosí Tékniku ka Espesialista Sira

5.1.1.1 New and Effective Approaches are Needed!  
Aprosimasaun ne’ebé Foun no Efikaz, Nesesariu Tebes!

Iha uma-kain balun deit mak relata katak sira tuir ona treinamentu no konesimentu ne’ebé sira hetan hosí treinamentu hodi hadi’ak kollieta ladun ás ida. Importante tebes atu fó apoiu no treinamentu ne’ebé efetivu.

The evidence from this research project is that relatively few households report receiving training, and more notably, that training has produced little or no appreciable benefits in terms of yield. It is not clear that simply putting more resources into training will give the desired improvements in yield and quality. What is needed is some clarity about how training and support can be delivered effectively.

Stakeholders in the coffee industry often express dismay of the lack of effectiveness of training in improving yields and quality of coffee. Research shows quite clearly that significant improvements in yield are achievable by basic activities such as pruning, planting new trees, mulching and weeding, and there are no real technical impediments to these being implemented. We resist the temptation to go for easy explanations along the lines that growers are lazy or short-sighted, or simply satisfied to be poor. There is some evidence in our research findings to challenge all of these possible explanations. Instead, we would argue there are quite rational explanations for farmers making the choices they do, and understanding these is vital to offering positive ways forward.

SUMMARY BOX 9  
Diffusion of Innovations  
by E.M. Rogers (2003)

Rogers’ influential theory is built on the premise that innovations spread more rapidly when instead of focusing on persuading individuals to change, the focus is more on reinvention of technology or processes so they better fit the needs of individuals and groups.

Rogers emphasises:

- Compatibility with existing values and practices;
- Simplicity of use;
- The importance of trusted peer networks.
5.1.1.2 Principles for Effective Training

Prinsipiu ba Treinamentu ne’ebé Efikaz

We argue that training and support for producers needs to be built on a platform of relationship. We propose three principles that need to undergird the relationship between the farmer and those offering support or training. These are based on influential work of Rogers (2003), who explores the factors behind why certain innovations are adopted more quickly than others, and emerging economic theories of induced innovation (for example, Ruttan, 1997).

Presiza atu dezenvolve apoiu no treinamentu ba produtór bazeia ba plataforma relasaun ho prinsipiu xavi 3: konfiansa, apoiu holístiku no ekonomia insentivu.

(i) Trust

Konfiansa

When a farmer is being offered advice from an outsider, and is urged to undertake different practices, not surprisingly there will be a degree of scepticism. Advice will not be taken seriously unless the farmer has a demonstrable reason to trust the outside advice. This is well recognised in the agricultural development literature, and fundamentally boils down to risk: do I take the advice of outsiders that may improve things or may make my situation worse, or do I stick with current practices whose outcomes I have come to know well?

Sei la foti konsellu ho sériu anaunserke agrikultór aprezenta razaun ne’ebé diak hodi fiar konsellu hosi liur.

(ii) Holistic Support

Apoi Holístiku

Poor, smallholder farmers view their agricultural production activities as an integrated part of their whole family and village community life. They view any intervention with the perspective of its impact on the whole household and community. Support and training will be better received if it builds on the existing social capital in the community, and considers all the needs of the household and the community, rather than seeing farmers purely as producers of a commodity.

Treinamentu sei lao ho diak wainhira treinamentu refere dezenvolve bazeia ba kapitál sosiál ne’ebé dadaun ne’e eziste iha komunidade no konsidera nesesidade hosí uma-kain síra no komunidade.
(iii) Economic Incentives  
Ekonomia Insentivu

Any support or training seeking to improve quality or yield needs to provide demonstrable improvements in economic wellbeing. This is not as simple as it sounds: improved practices such as pruning, planting, weeding involve extra labour, and even when labour is underutilised, households still make trade-off decisions about whether investing time in a productive activity produces a worthwhile return on labour.

Kualker apoio ka treinamentu hodi hadi’ak kualidade ka kolleita, presiza atu demonstra melhoramentu iha ekonomia ne’ebé diak – uma-kain siria presiza atu tetu didiak tempu ne’ebé sira uza ho nia returnu ba ekonomia.

5.1.1.3 Industry Structures that Facilitate Effective Training  
Estrutura Industria hodi Fasilita Treinamentu ne’ebé Efikaz

Can we leave it to the market?  
Karik ita bele husik ida ne’e ba merkadu?

In principle, training need not be provided from the public or NGO purse. Most training in Ermera district is currently provided by CCT, with a relatively small amount of training provided by other commercial buyers. However, for commercial operations like CCT and others to justify investing resources in support and training to growers, there needs to be an incentive for them to do so. Currently, the way the market works, there are inadequate incentives. For example, one company could invest in training and support for a group of producers, and then these producers sell their coffee to a competitor, providing no direct return on the investment in training.

Em prinsípiu, Instituisaun públiku ka ONG-sira presiza fó treinamentu. Maibe, ba kompaña komériu hanesan CCT no sira seluk, justifika investe rekursu hodi fó apoio no treinamentu ba produtór-sira, presiza atu fó insentivu mós ba sira hodi halao atividade ida ne’e. Dadaun ne’e, maneira funsionamentu merkadu la-fornese insentivu ida. Ezemplu, kompaña ida bele investe hodi fó apoio no treinamentu ba grupu produtór ida no tuir-mai produtór hirak ne’e faan sira nia kafé ba kompetitér-sira no la fó returnu ba iha investimentu treinamentu refere.
Can contract farming help?
Kontratu agrikultura bele ajuda ka lae?

The international trend in agriculture is towards contract farming models, where a contract between producer and buyer binds the producer to sell to that buyer, in return for receiving training and other support. There is evidence that such approaches can work even when producers are largely smallholder farmers (for example, see Kirsten & Sartorius, 2002). While on the surface this may seem to be a sensible way forward, it is not clear that the Timor-Leste coffee sector is ready for this type of contract farming. Such arrangements require a level of reciprocal trust and enforceability of contracts, which is unlikely to be appropriate at this stage of development of the sector.

While private / commercial buyers ought to be encouraged to provide training and support, there is a need in the short-to-medium term for ongoing support for training that is provided by non-government organisations without the profit motive. Such organisations are more naturally able to work with farmers in ways consistent with the principles of trust and holistic support.

Ladun klaru katak setór kafé Timor-Leste prontu ona atu adapta kontratu agrikultura. Arranjus ida ne’e presiza nivel konfiansa no aplikabilidade ba kontratu refere no iha faze dezenvolvimentu setór ida ne’e ladun apropiadu ida.

Do local co-operatives offer a solution?
Karik kooperativa lokál bele sai hanesan solusaun ida?

Internationally, it is found that often the most effective means of delivering assistance and training to poor rural farmers is by establishing co-operatives. Co-operatives allow small producers to benefit from the economies of scale in acquiring inputs, sharing processing equipment, etc., and to have some market voice through collective association. They also create opportunity for greater market access. Co-operatives need to be big enough to reap the benefits of economies of scale, but not so large that they lose the benefits of member participation and empowerment, and of trust through relationship.

Internasionalmente, identifika ona katak dalabarak maneira ne’ebé efetivu liu hodi fó asistensia no treinamentu ba agrikultór rurál mak estabelese kooperativa. Kooperativa perme produtór ki’ik sira hetan benefisiu hosi absorsaun ekonomia, fahe uza ekipamentu no sst no iha lian ba merkadu atravez asosiasaun ne’ebé kolektivu. Sira mós kria oportunidade hodi asesu ba merkadu ne’ebé diak. Presiza kooperativa ne’ebé bo’ot hodi atrai benefisiu ba ekonomia maibe laos bo’ot liu ne’ebé sira bele lakon sira nian benefisiu nu’udar membru, kapasitasaun no relasaun ne’ebé bazeia ba konfiansa.
Follow-up qualitative interviews with a selection of households uncovered some very positive benefits of training for a small number of households associated with medium scale networks of local initiatives. The research suggests that the best impact of training occurs when it is focused, intensive, smaller group localised training (for example, see Nwankwo, Peters & Bokelmann, 2009). There is better level of follow through in these cases, a vital aspect of seeing new practices implemented.

Training that is built around collective involvement with others at the local level also brings other benefits such as building trust and allowing participatory decision making. The co-operative can also take an interest in other community needs (such as creating access to other sources of income beyond coffee, assisting with saving and borrowing, etc.), providing a holistic approach to supporting coffee-producing households.

The co-operative model is a structure built around trust and holistic support of households, and also focuses on empowering households to make decisions about their economic futures and community needs.

Sistema kooperativa mak estrutura ida ne’ebé harii hosi konfiansa no apo’i holístiku ba uma-kain sira no mós focus ba kapasitasaun hodi foti desizaun kona-ba sira nia futuru ekonomia no nesesidade komunidade.

Follow-up ba intervista kualitativu ho uma-kain balun deskobre benefisiu pozitivu balun hosi treinamentu ba grupu ki’ik hosi uma-kain balun ne’ebé asosiadu ho liña-servisu eskalaun médiu hosi inisiativa lokál. Peskiza ne’e hatudu katak impaktu hosi treinamentu sei diak wainhira treinamentu nee halo ho intensive, fokus no pesoál ne’ebé partisipa ituan deit. Iha nivel follow-up ne’ebé diak, ezemplu hirak ne’e mak aspeitu xavi hodi haree pratíka foun bele implementasaun. Treinamentu ne’ebé mak dezenvolve hosi involvimentu kolektivu ho uma-kain sira seluk iha nivel lokál mós bele lori benefisiu seluk hanesan dezenvolve konfiansa no permite partisipasaun iha prosesu foti desizaun. Kooperativa mós bele halo buat seluk ne’ebé komunidade interese (hanesan kria asesu ba fonte rendimentu sira seluk aleinde kafé, ajuda manejia poupansa no impréstimu no sst.), fornese aproximasaun holístiku ida hodi fó apoiu ba uma-kain produktór kafé.
It is our strong recommendation that a greater emphasis within the industry be given to supporting existing small and medium-sized co-operatives that have strong local connections, and towards establishing new such co-operatives. The evidence is that the most effective training and support is taking place via model co-operatives of this type.

Ami nia rekomendasaun ne’ebé forte mak enfaze bo’ot iha industria hodi fó apoiu ba kooperativa eskalaun k’i’ik no médiu ne’ebé dadaun ne’e eziste ona, iha koneksaun lokál ne’ebé forte no tuir mai estabele kooperativa foun ida hanesan nee iha futuru. Nia evidensia mak bele implementa apoiu no treinamentu ne’ebé efetivu liu atravez modelu kooperativa ida hanesan ne’e.

**NEXT STEPS ON INDUSTRY STRUCTURE**

**FAZE TUIR MAI BA ESTRUTURA INDUSTRIA**

This recommendation could be actioned with the following steps:

Rekomendasaun ne’e bele implementa ho faze tuir mai ne’e:

1. Identifying small-medium sized co-operatives that are working among coffee growing households.
   
   Identifika kooperativa ho eskalaun ki’ik no médiu ne’ebé mak servisu hamutuk ho uma-kain produtór kafé.

2. Evaluation of the effectiveness of these households under various criteria for effective co-operatives.
   
   Halo avaliasaun efikaz ba uma-kain hirak ne’e, atravez kriteria balun ba kooperativa ne’ebé efetivu.

3. Building a template for the functioning of an effective coffee grower’s co-operative, based on lessons learned from existing co-operatives.
   
   Dezenvolve formatu ida ba funsionamentu kooperativa produtór kafé ne’ebé efetivu bazeia ba lisaun aprendida hosi kooperativa ne’ebé dadaun ne’e eziste.

4. Seed funding for establishing co-operatives in target communities.
   
   Inisiu finanseiru hodi estabelese kooperativa ne’ebé nia alvu orienta ba komunidade.
5.1.2 Creative Approaches to Subsidies – Economic Incentives

The co-operative structure we are advocating is designed to address the need for training and support that is built on relationships of trust and on a commitment to holistic support of coffee producing communities. Next we address the issue of economic incentives by proposing an approach to subsidies that builds in improved economic incentives.

Our assertion is that the price paid to coffee growers is so low that there is inadequate incentive for them to increase output. Estimates by the Ministry of Agriculture and Fisheries (2009) show that traditional farming methods with little pruning or replanting of trees yields a modest but not insignificant return for each work day. While improved practices can triple average output and hence income, it is estimated that they also require three times the amount of labour, so the estimated average return to a day's work is almost identical. It is normally argued that there is a vast amount of idle labour in rural communities, which effectively means that it is rational to undertake any activity that produces a positive net economic return, because the alternative is zero-return idle labour. Hence the additional work associated with improved practices ought to be undertaken even if the daily return was much smaller than this.

However, there is reason to challenge this analysis. Investing more time in farm work is not without costs. Poor, rural households have a number of other daily tasks they must undertake just to survive, including collecting water and firewood, growing and processing their own food, etc. These take time and energy. In addition, households often have low calorie intake, and hence much lower energy levels than they would if food was in plentiful supply, so while they have idle time, they may need to ration their energy.
Added to this is the risk associated with adopting practices that, from the farmer’s point of view, are unproven, and in the short term may cause a loss of output as a result of pruning and replacing trees. There appears to be little in the price of coffee to compensate for these risks.

**Cash transfer proposal:**

Proposta transferensia osan:

We propose a scheme whereby income supplementation is provided via a network of locally run village committees associated with coffee producer co-operatives. We recommend trialling the following approach to determining such payments: households receive an additional payment in the non-harvest months (for example, six months after harvest), which is a fixed amount per kg of coffee sold in the previous harvest. For example, the amount might be 50 cents per kilogram of parchment sold (10 cents per kilogram of cherry).

There would be some upper limit to this amount (say, 750kg of parchment, which would be relevant to less than 2% of producers, based on the survey data collected in this study).

Ami propoin sistema suplementasaun rendimentu ne’ebé fornese atravez liña-servisu implementa hosi konsellu suku asosiadu ho kooperativa produtór kafé. Ami rekomenda experimentasaun saida mak bele sai hanesan aproximasaun kontra-intuitivu hodi determina pagamentu hanesan: uma-kain sira simu pagamentu adisionál iha fulan laos tempu kollieta (ezemplu, fulan 6 hafoin kollieta) ne’ebé nia montante fixu kafé per kg faan iha tempu kollieta liu ba. Ezemplu, nia montante bele sentimu 50 per kg ba kafé hasai kulit la habai maran ne’ebé faan (kafé kulit tasak sentimu 10 per kg).

Sei iha limitasaun balun ba montante ida ne’e (ezemplu, kafé kulit maran 750kg ne’ebé menus hosí 2% ba produtór bazeia ba survei kolesaun dadus iha peskiza ida ne’e).
Why do we recommend a program that is essentially a regressive cash transfer, where the very poor may receive less than the less poor (because they produce less coffee)? As noted, one reason for low agricultural productivity is that producers receive such low prices for their product that there is little incentive to work hard during the off-season to care for the land and trees with a goal of maximising yield. A transfer that is tied to the previous harvest provides an incentive to undertake such off-season activities, knowing that it will be rewarded with what is effectively a higher price.

Transferensia ne’ebé relasiona ho tempu kollieta liu ba nee, fornese insentivu ida hodi halao atividade ne’ebé mak bele hadi’ak kualidade no kollieta, klaru ida ne’e efetivamente sei hetan presu ida ne’ebé ás.

One economic rationale for this approach is found in a version of the well-known efficiency wages hypothesis, where employers often pay more than the market wage in order to increase workers’ productivity or efficiency (for an early example of the application of this theory to poor farmers, see Stiglitz, 1976). There is also ample evidence that poor producers do respond to price incentives with increased effort and increased output (for example, a World Bank study of cocoa in Ghana finds that “a variety of models estimating the sensitivity of production supply to farm gate prices find that small-scale cocoa producers in Ghana have responded positively to these price incentives” (Kolavalli & Vigneri, 2011, p. 209)).

At a practical level, payments tied to actual physical production / sales are also easier to administer and more transparent.

Iha nivel práti, pagamentu ne’ebé relasiona ho produsaun fiziku atual mós fasil atu rejista no transparente liu.

The obvious criticism of this proposal is that the assistance does not target those who need it most – the poorest of the poor. We appreciate this is a difficult trade-off, but international evidence about development assistance is that it is very easy for welfare interventions to unintentionally create dependency, and to discourage households from investing in strategies that will help them bring themselves out of poverty. This proposal is designed to reward those who work hard and take the initiative to improve their coffee yields. In addition, our next set of recommendations is around programs that specifically target the very poor. They would provide complementary assistance that is specifically pro-poor.
A number of important issues need to be addressed around this proposed cash transfer scheme, and we will briefly discuss two key issues here. Firstly, how would such a scheme be funded? Initially the proposal is for a trial only, but if the cash transfer was applied to all coffee production, at 50 cents per kilogram of parchment, we estimate it would cost approximately $5 million per annum. While this is no small sum, it is a relatively small proportion of the overseas development assistance that is received annually in Timor-Leste. It also represents only a tiny fraction of the annual funds available from the Petroleum Fund. Utilising a very small part of this fund for a broad-based cash transfer of this type would provide an arguably fair dividend to the rural people of Timor-Leste, as well as producing potential long term benefits in the form of improved future productive capacity.

Is such a scheme sustainable? As already emphasised, the cash transfers are designed to provide a greater incentive for farmers to increase yield and quality of their coffee. If the scheme is successful in achieving this objective, then within a few years, households will be experiencing increased incomes through higher yields and volumes sold, as well as possible quality premiums. We would thus argue that the cash transfer scheme need only be in place for 3-5 years, with the possibility of it being phased out gradually in the final year or two.

**NEXT STEPS FOR ECONOMIC INCENTIVES**

**FAZE TUIR MAI BA EKONOMIA INSENTIVU**

We recommend trialling the cash transfer scheme in certain areas, with implementation via one of the established medium-sized producer cooperatives, and evaluating its effectiveness in improving yields.

Esperimentasaun modelu transferensia osan iha área balun ho kooperativa produtór kafé ne’ebé estabelese ona no avalia nia efikaz hodi hadi’ak kollieta.
5.2 Accessing Financial Services

Asesu ba Servisu Finanseiru

Iha montante ida ne’ebé simples kona-ba poupansa no imprestimu entre uma-kain sira, maibe ida ne’e ladun familiar iha instituisaun finanseiru formál sira. Rendimentu hosi kollieta ne’ebé ás halo uma-kain sira sei posivel atu konsidera halo poupansa hosi sira nia rendimentu. Atu efikaz liu, uma-kain sira presiza asesu ba instituisaun ne’ebé iha kredibilidadade hodi kria poupansa no imprestimu asesivel. Pagamentu anuál kona-ba transferensia osan bele mós halo ho efisiente liuhosi transferensia ba iha kada uma-kain sira nian konta banku. Instituisaun ida ne’ebé apropiadu liu mak instituisaun mikro-finansia ho eskalaun médiu duke banku-sira ne’ebé kontrole hosi sentrál. Instituisaun hirak ne’e eziste ona iha Timor-Leste maibe bele espande liu-tan sira nian asesu ba iha área rurál liuhosi programa transferensia osan ne’e.

The survey reveals a modest amount of savings and borrowings behaviour, although this is heavily constrained by the low incomes of households. In addition, this saving and borrowing is very rarely with formal financial institutions. It is widely recognised that access to financial services is a crucial aspect to development among poor communities (AusAID, 2010).

The significant increases in harvest income that would occur with higher prices and improved yields make it possible for households to consider saving some of their income to enable consumption smoothing. To facilitate this saving, households need access to trusted institutions which make savings and (possibly) affordable loans accessible.

We propose that provision of simple and affordable financial services products be substantially expanded among rural households, and used as the institutional vehicle through which the cash transfer scheme proposed above is implemented. Payment of the annual cash transfer would take place via transfers into each household's savings account. This is an efficient way to deliver the transfer, and has additional benefit of opening up access to formal savings and borrowings. The most appropriate institutions are likely to be medium sized microfinance institutions, rather than centrally-controlled banks. These institutions exist already in Timor-Leste, but their reach in rural areas can be significantly expanded with the initial impetus provided by the cash transfers.
5.3 Establishing Pro-Poor Seasonal Programs

The research suggests that food consumption among low income rural households is much lower in non-harvest season. There are many detrimental long term effects of low nutrition for health, child development and education and productivity.

In the short term, the chronic and repeated lack of access to food is not a problem that can be ignored. Short term solutions are difficult, as they are costly, involve significant co-ordination and logistics, and most importantly, interventions must be designed in such a way as to not create disincentives for households and communities to work toward long term solutions. For example, while the distribution of food in hungry months may be a solution, this may well lead to poorer long term planning and savings in future years, only increasing the magnitude of the problem.

The cash transfer scheme described above has a consumption smoothing aspect, in that we recommend the additional payment be made 6-8 months after the harvest season has concluded.

Modelu transferensia osan ne’ebé deskreve iha leten iha nia aspeitu konsumsaun, tan nee ami rekomenda pagamentu adisionál halo iha fulan 6-8 hafoin tempu kollieta ramata ona.
We recommend that this cash transfer strategy be accompanied by specific targeting of needy groups at times of the year when they are most vulnerable. While the cash transfer payments are designed to provide an incentive to see significant improvements in productive income, other programs can be put in place that assist the very poor. Poverty incidence analysis based on other research and the results of this survey suggest a few key factors in targeting:

- Geographic location is a key determinant of extreme poverty. At a national level, there is a reasonable amount of geographic diversity in the incidence of poverty, and within districts, communities that are more isolated tend to have lower incomes, and hence would appropriately be the target of these programs.

- Programs that target children would be a high priority. The survey results suggested that when food was in short supply and some members of the household had to eat less than normal, 51% of the time it was the children who were specifically mentioned as the ones receiving less food.

- It is important to see programs that address needs at particular times of the year, especially wet season and non-harvest hungry months.

Existing institutions such as schools and health centres could be useful vehicles for delivering specific wet season / hungry months programs aimed at nutrition and health.
5.4 Addressing Issues with Distribution of Basic Food (Rice)

Rezolve Problema ho Distribuisaun Ai-han Baziku (Foos)

Peskiza ida ne’e foka ona ba merkau nia failla relasiona ho presu foos ne’ebé fó impaktu bo’ot ba uma-kain sira wainhira sira iha problema krédito ne’ebé afeita ba sira nia problema finanseiru. Iha kazu ne’ebé bo’ot mai hosí rezultadu balun ba intervensaun ne’ebé koalia kona ba limitasaun ai-han baziku iha tempu balun iha tinan ida nia laran.

It is well documented that malnourishment is prevalent in Timor-Leste, especially in rural areas. This research has highlighted market failings in the pricing and distribution of rice which have their worst effect on households when they are the most credit constrained, adding substantially to their financial burden. Large measurable welfare costs are thus incurred by poor households, most directly the lower levels of food consumption in the non-harvest season. There is a strong case coming from these findings for some kind of intervention that addresses the shortage of affordable basic food at certain times of year.

There is at this point limited understanding of the key issues that currently lead to market failure in the distribution of rice; the most likely areas that need addressing are poor households’ credit constraints and issues with transportation and storage of food in the wet season. While the cash transfer proposal above would help address the credit constraints to some extent, this will not address the problems with transportation and storage that appear to be driving the inflated wet season prices.

At a broader level, a greater understanding is needed of supply mechanisms for essential foods, with a view to identifying the main causes of market failure. More research along these lines would provide greater clarity about what are the most necessary interventions.

**NEXT STEPS IN FOOD DISTRIBUTION**

**FAZE TUIR MAI BA DISTRIBUTISAU N AI-HAN**

We recommend trialling a program which provides for secure local (suco-level?) storage of bulk quantities of rice, transported during the dry season and then made available for sale/distribution in the wet season when access is an issue.

Ami rekomenda programa provizionál ida ne’ebé mak fornese armazenamentu lokál (nivel suco?) ne’ebé seguru ba foos ho kuantidade bo’ot, transporta durante tempu bai-loron no disponivel ba ema atu sosa / distribui iha tempu udan wainhira asesu sai hanesan problema ida.
DIVERSIFICATION INTO OTHER AGRICULTURAL ACTIVITIES

The survey results show that in the Ermera district at least, most coffee-producing households generate virtually no income from other agricultural activities, with the exception of some income from livestock. There are obvious benefits to diversifying income, in terms of providing income at other times of year, providing alternative income sources that are not vulnerable to global commodity price fluctuations, improving yields on land and increasing use of rural labour.

If there are so many benefits to broadening the range of income sources, why is there so little income generated from these sources? Why are local producers unable to gain ready access to markets beyond their local, small scale area?

The lessons of coffee are relevant here: our argument is that establishing alternative crops will involve major investment at all stages of the production and supply chain, from production, processing, transport and other logistics, to creating and building markets. Coffee has been grown as a cash crop in Timor-Leste for many years, and there is a well-established supply chain. The very large number and high concentration of producers mean there is capacity for sharing of expertise and knowledge, there are several buyers and processors, many avenues for transport of the product to processing facilities, well established international markets and supply routes. Even despite this, coffee producers still experience failures in the supply chain at times (e.g. inability to sell coffee cherry in good time that leads to spoilage).

When considering diversification into other products, the many challenging issues with the supply chain must be addressed. Each stage is critical – if some critical stages are not managed well, the whole effort will likely fail. Scale is also important: small scale production in isolated pockets will not easily lend itself to cost effective or reliable operations across the supply chain.

Diversifikasaun ba atividade agrikultura bele ajuda rendimentu inseguransa sira seluk iha industria kafé. Maski obstaku barak relasiona ho supply chain tenki rezolve no kada faze kritiku tebes. Eskalaun mós importante – problema supply chain fasil liu atu rezolve ho atividade sira ne’ebé involve produtór barak no volume ne’ebé bo’ot.

Establishing alternative crops will involve major investment at all stages of the production and supply chain.

Estabelese kollieta alternativu involve investimentu bo’ot iha faze produsaun no nia korenti fornesimentu (supply chain).
This research shows clearly that the higher income households in the sample appear to achieve their higher incomes largely via labour income. The challenge with making this aspect an avenue for reducing poverty is with the lack of options for employment in rural areas. As a consequence, rural-urban migration is seen as an increasingly attractive option for many (especially the young) – for example, a survey of rural households by Housen, Hopkins and Earnest (2012) finds that more than 40% of households have at least one migrant, with the vast majority being aged 15-34. Given large household sizes, large numbers of youth and young adults and low rural incomes, this rate of rural-urban migration is likely to be sustained for some time yet. The issue of rural poverty will increasingly become one of large scale urban unemployment.
CONCLUDING REMARKS

The challenges of development in Timor-Leste are great, especially in poor, rural areas. The findings of this research suggest that in the medium term at least, investment in building the incomes of coffee producers will provide a viable and broad-based means of improving welfare of poor, rural households. We hope that the recommendations in this report can be a stimulus to further progress towards this end.

Desafiu ba dezenvolvimentu Timor-Leste bo'ot tebes, partikularmente iha área rurál ne’ebé mukit. Rezultadu hosi peskiza ne’e hatudu katak iha médiu prazu, investimentu hodi hasa’e rendimentu agrikultór kafé sei hadi’ak moris-diaak ba uma-kain mukit iha área rurál. Ami espera katak rekomendasaun iha relatóriu ne’e bele sai estimula ida ba progresu ne’ebé diak iha nia rohan.

Thanks go to the many people in the district of Ermera who took the time to tell us their stories of struggle and hope. Their perseverance and hospitality is an inspiration; our desire through this research is to see improvements in their lives that strengthen them individually, as families and communities, and as a nation.

Obrigado barak ba populasaun iha distritu Ermera ne’ebé fó ona sira nia tempu hodi fahe esperiensia kona-ba sira nia susar no esperansa. Sira nia perseveransa (ketekunan) no sira nia óspitalidade (keramahan) sai hanesan inspirasaun ida; ami nia hakarak atravèz peskiza ida ne’e mak atu haree melloramentu iha sira nia moris ne’ebé bele haforsa sira nu’udar pesoál, familia, komunidade no nasau nida.
REFERENCES


International Coffee Organisation (2009). Opportunities and Challenges for the World Coffee Sector: Multi-Stakeholder Consultation on Coffee of the Secretary-General of UNCTAD.


Appendix I: Empowerment model table
Role of Participatory Action Research in empowering communities

<table>
<thead>
<tr>
<th>Ind</th>
<th>Plan (Awareness)</th>
<th>Act (Tools)</th>
<th>Observe (Learning)</th>
<th>Reflect (Outcomes)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Language barriers, challenges, communication – 😂: humour 😊; no effort 😞: basic greetings 😊</td>
<td>• Graphic communication</td>
<td>• Skills ↑:</td>
<td>• Independent thinking 😊</td>
</tr>
<tr>
<td>Org</td>
<td>• “Champion”</td>
<td>• Translator: informed 😊; uninformed 😞</td>
<td>• Confidence ↑:</td>
<td>• Identify mistakes/bias 😞</td>
</tr>
<tr>
<td></td>
<td>• Time 😊</td>
<td>• Evidence</td>
<td>• Patience</td>
<td>• Caring</td>
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<tr>
<td></td>
<td>• Open mind</td>
<td>• Participation</td>
<td>• Loyalty</td>
<td>• Ownership?</td>
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<tr>
<td></td>
<td>• Self awareness</td>
<td>• Authentic communication 😊</td>
<td>• Problem solving skills</td>
<td>• Insight</td>
</tr>
<tr>
<td></td>
<td>• 🙅: Identify players</td>
<td>• Multiple roles of the researcher</td>
<td>• Recognise decision making abilities, resource /knowledge acquisition skills</td>
<td>• Self perspective change</td>
</tr>
<tr>
<td></td>
<td>• Listen</td>
<td>• Skill development – project based 😊; requested 😞; not applicable to situation 😞</td>
<td>• Have a voice</td>
<td>• Leadership</td>
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<td></td>
<td>• Compliant/non engaging 😞</td>
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<td>• Critical reflection</td>
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<td></td>
<td>Org</td>
<td>Team building</td>
<td>Problem solving 😞:</td>
<td>Encourage communicative action</td>
</tr>
<tr>
<td></td>
<td>• Identify existing resources/infrastructure 😊</td>
<td>• Documented meetings</td>
<td>• Collective process of learning</td>
<td>• Identify and work with others for change</td>
</tr>
<tr>
<td></td>
<td>• 🙅: Skill needs</td>
<td>• Collaboration</td>
<td>• Mutual respect</td>
<td>• Expansion of organisation networks</td>
</tr>
<tr>
<td></td>
<td>• Communication challenges 😞</td>
<td>• Authentic communication 😊: Training</td>
<td>• Feedback</td>
<td>• Collective decision making networks</td>
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<td>• Time 😊</td>
<td>• Collaborative 😊</td>
<td>• Enhanced capacity</td>
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<td>• Workshops</td>
<td>• Authoritative 😞</td>
<td>• Continued collaboration</td>
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<td></td>
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<td>• Utilise resources/infrastructure 😞</td>
<td>• Experience</td>
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<td>Com</td>
<td>Participatory evidence gathering</td>
<td>Debrief</td>
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<td>● Identify research priorities</td>
<td>● Authentic communication</td>
<td>● Feedback</td>
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<td>● Provide opportunities</td>
<td>● Build on strengths</td>
<td>● Trust</td>
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<tr>
<td>● Community based question</td>
<td>● Time ☀</td>
<td>● Knowledge</td>
<td></td>
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<tr>
<td>● Expectation management</td>
<td>● Case studies</td>
<td>● Groups getting a voice</td>
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<tr>
<td>● Identify available resources/knowledge</td>
<td>● Shared decision making, responsibilities, power – enforced</td>
<td>● Conflicting goals of stakeholders ☐</td>
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<td></td>
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<tr>
<td>● Cultural influences</td>
<td>● Work with ☥</td>
<td>● Accessing government resources</td>
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<tr>
<td>● Community driven approaches</td>
<td>● Work on ☥</td>
<td>● Shared decision making</td>
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<td>● Time ☀</td>
<td>● Work for ☥</td>
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<td>● Ability to choose</td>
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**Timor-Leste framework**

*Occupation*  * Infrastructure*  * Foreign Aid

* Timor-Leste  * Colonisation  * Independence

* Post-conflict  * Patriarchal  * Development policies

* Catholic  * Animist  * Land tenure

* Agriculture  * Languages  * Multi-lingual

* Poverty  * Coffee

* Culture  * Rural population

**Key**

- ☀ Communication
- ☥ Time challenges
- ✨ Power dynamics
- ☐ Identify
- ☐ Negative
- ☥ Positive
- ⚠️ key point