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The economic value of Southern Cross University on the Tweed-Gold Coast economy: an input-output analysis

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The Economic Value of Southern Cross University on the Tweed–Gold Coast Economy: An Input–Output Analysis

by

Simon Wilde, Jeremy Buultjens, Lucy Walsh and Stephen Mason

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EXECUTIVE SUMMARY

- This report details the estimated economic impact of Southern Cross University's (SCU)

 Tweed and Gold Coast campuses on the local economy for the years 2010 and 2012. In
 this study the local economy refers to the Australian Bureau of Statistics (ABS) identified

 Local Government Areas (LGAs) of Tweed Heads and the Gold Coast, termed for the
 purposes of this report the Tweed–Gold Coast region. From 2010, the university will
 operate across four locations/campuses within the region:
 - >> Riverside Brett Street, Tweed Heads;
 - >> Lakeside Caloola Drive, Tweed Heads;
 - >> Beachside under construction at Gold Coast Airport Development Park;
 - >> Airport Offices located within the retail precinct of Gold Coast Airport.
- In 2010, it is projected there will be 247 staff employed at SCU's Tweed–Gold Coast campuses catering for 848 equivalent full–time students. In 2012, it is expected there will be 379 staff and 1392 equivalent full–time students.
- The estimate of the economic impact on the respective region is based on the application of a regional input—output matrix which models the industry sectors of the region and the way these sectors interact within the whole of the region's economy. This approach allows a logical and supportable method of determining the contribution of SCU to the region's economy.
- The specific regional input—output model applied in this context is embodied in the computer—based model, Regional Economic Modelling and Planning System (REMPLAN).
 REMPLAN was developed by Compelling Economics, in conjunction with La Trobe University.
- The estimated impact of SCU's Tweed–Gold campuses on the surrounding region's economy is analysed in three key phases. Firstly, the ongoing impact for 2010 was measured using the number of employees and non–local student expenditure as inputs

to the model. Secondly, the direct construction effects (2010) related to new campus developments (Beachside) were established. Finally, projected 2012 impact (guided by estimated staff positions and increased student load/expenditure) was derived.

- The model was used to estimate the impact on: (1) Value of Regional Output, (2) Regional Employment, (3) Household Income and (4) Value Added, within the defined region.
- The **estimated total impact** of the university on the regional economy in 2010 and 2012 is summarised in the tables below. While further campus developments are planned at Gold Coast Airport Development Park (see page 14), only construction—related details (i.e., construction expenditure) for 2010 that are known at this time are included. As such, *only the estimated total impact based on direct employment and non—local student expenditure* is included in 2012 projections.

Table 1: Total Economic Impact. Direct Employment | Construction Effects | Student Expenditure.

Tweed–Gold Coast Regional Economy, Southern Cross University – Projected for 2010.

Measure	Value
Region's value of annual output attributable to SCU (including direct employment, construction and student expenditure impact)	\$125.284m
Region's employment attributable to SCU (including direct employment, construction and student expenditure impact)	531 jobs
Region's annual household income attributable to SCU (including direct employment, construction and student expenditure impact)	\$35.975m
Region's value added attributable to SCU (including direct employment, construction and student expenditure impact)	\$55.793m

Table 2: Total Economic Impact. Direct Employment | Student Expenditure.

Tweed–Gold Coast Regional Economy, Southern Cross University – Projected for 2012.

Measure	Value
Region's value of annual output attributable to SCU (including direct employment and student expenditure impact)	\$79.239m
Region's employment attributable to SCU (including direct employment and student expenditure impact)	484 jobs
Region's annual household income attributable to SCU (including direct employment and student expenditure impact)	\$34.783m
Region's value added attributable to SCU (including direct employment and student expenditure impact)	\$45.843m

1. INTRODUCTION: A BRIEF HISTORY OF SOUTHERN CROSS UNIVERSITY

In 1988, the Lismore-based Northern Rivers College was amalgamated with the University of New England and Orange Agricultural College. It became the University of New England – Northern Rivers. However, during 1992 the university's Board of Governors requested the State and Commonwealth Education Ministers consider dismantling the networked university. Subsequently, the ministers established an advisory group to consider the implications of such a move. The group recommended the establishment of a new university in the North Coast region of NSW, incorporating the previous University of New England campuses at Lismore and Coffs Harbour, with the possibility of establishing additional centres at other North Coast locations as required. It also proposed that the new university develop under the sponsorship of a major metropolitan university for the first three years, while operating under its own name and with Council awarding its own degrees.

A new university was established, comprising the former UNE – Northern Rivers and the UNE – Coffs Harbour centres. The university was officially established in November 1993 and began operating as Southern Cross University in 1994, with a sponsoring arrangement with the University of New South Wales. At the time the university also operated university centres in the Clarence Valley (Grafton), the Gold Coast (Coolangatta), Port Macquarie, and in the Tweed Valley (Murwillumbah), which at the time of writing were no longer in operation.

The Tweed-Gold Coast campus was opened in 2001 to meet the educational demands of the growing Tweed and Gold Coast regions.

SCU's new Gold Coast campus is being developed at Bilinga, Queensland. The Lakeside and Riverside campuses are located nearby over the NSW border. SCU's Tweed-Gold Coast campus offers degrees in social science, occupational therapy, education, business, law and justice, tourism and hospitality management, sport management and, from 2010, midwifery and nursing.

In 2010, it is projected there will be 247 staff employed at SCU's Tweed–Gold Coast campuses catering for 848 equivalent full-time students. In 2012, it is expected there will be 379 staff and 1392 equivalent full-time students.

2. METHOD

2.1 Regional Input-Output Methodology

Input—output is a tool often used for estimating the impacts of an economic activity on a regional economy. An important attraction of the input—output modelling approach is that it is capable of providing a detailed picture of the structure of an economy at a particular point in time. This is achieved by disaggregating the productive activities in the economy into industry sectors and documenting all the transactions (purchases and sales) that occurred during the time period (usually one year) between these sectors. The input—output model may be regarded as a set of regional accounts which provides the basis for a detailed analysis of inter—sectoral relationships within a regional economy.

The classic input—output model is described by the following matrix equation:

$$X = AX + Y \tag{1}$$

Where X is the vector of sectoral gross outputs, A is the matrix of regional intermediate input or regional purchase coefficients, and Y is a vector of total final demands by sector. The coefficients a_{ij} of A are defined as the amount purchased by sector j from sector i per unit of output of sector j. Equation (1) states that gross output of each industry equals intermediate demand sales (AX) to other industries for further processing plus final demand sales (Y) of end products to consumers, including households, government and for export. By rearranging and converting to differences, this equation can be rewritten as:

$$\Delta X = (I - A)^{-1} \Delta Y \tag{2}$$

This allows calculation of change in industry production levels ΔX in response to the change in industry final demands ΔY . ΔY can incorporate any element of final demand expenditure.

Some care needs to be taken in the use of input-output approaches and it is important the underlying assumptions are kept clearly in mind. The main assumptions are (i) Fixed

production coefficients, which imply constant returns to scale. That is to say, if the output of sector j doubled, it would be necessary to double all of its inputs with no evidence of scale economies. (ii) It is also assumed that regional economic performance matches national average performance. (iii) Input proportions are assumed to remain the same with no change in technology. As long as the model is kept up to date this latter concern should not pose a threat to its effectiveness, except as a tool for long–term forecasting. (iv) It is assumed that each industry sector produces a fixed set of products that are not produced by any other sector. While it is possible to have some overlap between sectors, e.g. liquor sold in hotels (the retail sector) and in cafes (the accommodation, cafes and restaurants sector), such an assumption should not inhibit the validity of the model to any great extent. (v) Finally, it is assumed that there are no supply constraints and that the intermediate and household sectors will be able to service any increases in final demand. This assumption can weaken the predictive capacity of the model in cases where increases in overall demand could bring about factor shortages and raise prices in the short term.

There are three main approaches to the construction of *regional* input—output models. The first approach is to survey all firms in the region to obtain details of the source of supply of all inputs as well as the destination of outputs. This is often referred to as the *bottom up* approach. While such an approach is often considered robust it is very expensive in terms of the resources and time necessary for data assembly. A less expensive and more timely approach is to adapt the data available from national tables produced by the Australian Bureau of Statistics (ABS) in a manner likely to be representative of the particular region under study. This *top down* approach, as it is known, uses available regional Census data (such as employment by industry group) to adjust national data to form a regional input—output table. A third approach is the *hybrid* method that commences with the top down disaggregation of the national model and is supplemented by selective surveys for key sectors within the region. This is the method used by the REMPLAN model. Such an approach is more economical and timely than surveying all firms within a region.

Research relating to the accuracy of these three main approaches has indicated that results from the top down approach were very close to that provided by a bottom up approach. The hybrid method produced results even closer to that of the full survey approach and was seen

to be superior in terms of cost and timeliness. REMPLAN provides regional input—output matrices at three levels of sector aggregation: 17 sectors, 35 sectors or 106 sectors. The sector aggregations are consistent with Australian Bureau of Statistics classifications with all data used by REMPLAN derived from the ABS 2006 Census of Population and Housing. The model also tabulates employment figures (by number of employees) by industry sector. In addition to providing static data for each region, REMPLAN has the facility to model impacts on the regional economy. The user is able to enter impacts in terms of changes in direct output or direct employment for a particular sector or mix of sectors. These direct impacts then flow through the model in order to provide detailed information on the total impact, both direct and indirect, to the regional economy.

The model provides detailed information on the changes in output, employment, household income and value added which result from a change in the direct output of one or more sectors. Economic impact scenarios can be conducted for both actual, as well as hypothetical changes within the region's economy.

2.2 Region of Analysis

In 2006, a study jointly funded by the Australian Government, Queensland Government, Gold Coast City Council, Tweed Economic Development Corporation, and Gold Coast Airport Limited, identified a new local economic zone – the Tweed–Gold Coast Enterprise Region or TweedGold. The identification of this economic zone was based on the increasing importance of the Gold Coast International Airport and the expanding highway network that positions the Gold Coast and Tweed as a transportation hub. On that basis, TweedGold was defined as a single, dynamic, interconnected economic entity. The immediate impact region for this report has therefore been defined as the Local Government Areas (LGAs) of the Gold Coast and Tweed Heads.

2.2.1 Economic Overview – Region of Analysis

Defined Area: Gold Coast (C) - Tweed (A)¹

Population: 513,283

Gross Regional Product (\$M): \$24,548.885

Per Capita Gross Regional Product (\$'000): \$47.827

Output

Total output in the area is estimated at \$53,968.848m. The major contributors to output are shown in the following illustration:



Figure 1: Tweed–Gold Coast Region Total Output (\$m) and Major Contributors

¹ Data sourced from: ABS 2006 Census Place of Work employment data; ABS 04/05 Input – Output Matrix; ABS 2008 June NSW – QLD GSP. Using ABS datasets, an input/output methodology and industrial economic data, estimates for defined geographic regions are generated.

Employment

Total employment in the area is estimated at 191,601 jobs. The major contributors to employment are illustrated below:

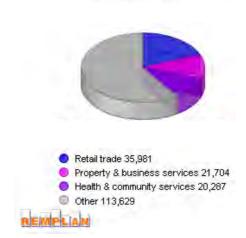


Figure 2: Tweed–Gold Coast Region Total Employment (Jobs) and Major Contributors

Value Added

Total value added in the area is estimated at \$22,063.153m. The major contributors to value added are:



Figure 3: Tweed-Gold Coast Region Value Added (\$m) and Major Contributors







Pictured (from top to bottom): Beachside (foundation building) under construction at Gold Coast Airport Development Park; Lakeside Campus; and Riverside Campus.

2.3 Simulating the Model

The estimated (2010) impact of SCU's Tweed–Gold Coast campuses on the surrounding region's economy was analysed in two ways. Firstly, the ongoing impacts were measured using direct employment and student expenditure as inputs to the model. Following this, additional impacts related to new campus developments (Beachside) were established.

| Ongoing regional impact: Direct Employment (2010)

In order to simulate the model it was assumed that current Tweed–Gold Coast campuses/offices (i.e. Riverside, Lakeside and Airport Offices) would be hypothetically shut down and all employment involved with each of those locations terminated. Furthermore, it was assumed that estimated new employment growth assigned to the university's Beachside Campus would also be lost should SCU's presence on the Tweed–Gold Coast (hypothetically) cease. Employment data for each location was provided by the Office of Deputy Vice–Chancellor. The number of employees projected for 2010 is 247, with an estimate of 379 employees in 2012.

The number of employees (either increasing or decreasing), when entered into REMPLAN, provides an estimate of the direct impact on \$ value output of the education sector resulting from these employees. The model then determines the total linked and induced impacts of this initial employment (either increasing or decreasing) on the respective regional economy according to the value of regional output, regional employment, household income and value added within the region. An important notion linked to this aspect of impact would be to assume that all individuals employed by SCU at its Tweed–Gold Coast locations reside within the LGAs of the Gold Coast and Tweed Heads. An analysis of current staff residential locations revealed that 74% of all SCU Tweed–Gold Coast staff reside within the Tweed–Gold Coast region, with the remaining 26% travelling into the region to undertake their employment duties. This being the case, only the impact of those individuals residing within the Tweed–Gold Coast region is included in this analysis. The 2009 ratio of Tweed–Gold Coast region versus non–Tweed–Gold Coast region staff is also utilised when projecting 2010

and 2012 employment impacts. Therefore it is estimated that there will be 182 staff members in 2010 and 281 staff in 2012 who work at a Tweed–Gold Coast campus and live in the Tweed–Gold Coast region. Finally, the mix of full–time and part–time staff within the direct employment figure is assumed to be similar to the national mix of these employment patterns within the education sector.

| Ongoing regional impact: Projected Student Expenditure (2010)

Student demographic data provided by the university's Marketing and Media Department was used for determining student expenditure impact. It was found that approximately 50% of students studying at SCU's Riverside facility came from outside the region. This local versus non–local student ratio is applied to student expenditure projections for 2010 and 2012 and equates to expenditure of 424 students in 2010 and 696 in 2012.

In this report, it is conservatively assumed that only expenditure by non-local (including international) students provides a net dollar value added impact to the regional economy. Local student expenditure has not been included on the assumption that these students would remain within the Tweed-Gold Coast region despite a hypothetical absence of SCU, given other higher educational opportunities offered locally. However, it is likely a high percentage of these students would, in fact, leave the region to attend a university elsewhere. If this occurred it would mean the figures reported here are an underestimate of the SCU student impact.

For this exercise, the average annual expenditure for students, as determined by the university (SCU Costs Brochure, January 2009), has been taken across a number of key sectors, notably retail; transport and storage; property and business services, and cultural and recreational services:

- Retail \$4050 (food \$2800, clothing \$500, deposits \$750). This equates to 34% of total expenditure.
- Transport and storage \$1200 (10%)
- Property and business services \$4600 (38%)

Cultural & recreational services – \$2100 (18%)

It should be noted that the above figures are most certainly conservative. Looking at general patterns of student behaviour there is a strong likelihood that many students seek and successfully gain local employment. An increase in student income would lead to an increase in their expenditure within the local region, notably within the key sectors listed above.

| New regional impact: Projected Construction Effects (2010)

In 2007, the master plan for the new Southern Cross University Gold Coast campus, incorporating environmentally–friendly design and state–of–the–art technology, was unveiled by Vice–Chancellor, Professor Paul Clark.

The new Beachside campus, to be built in stages within Gold Coast Airport Development Park, will welcome its first cohort of students in early 2010 (Foundation Building). The new campus will initially offer courses in business, tourism and law, with allied health, education, social welfare and sport management, offered from the existing Tweed Heads locations moving to the new campus over time. The new campus will cater for domestic and international students. The Riverside facility will be transformed into a dedicated Graduate College of Management premises offering postgraduate business qualifications and intensive management courses.

The new campus site straddles the Queensland and New South Wales border, with the Academic Precinct on the Queensland side. It will be accessible via the Gold Coast Highway and the Tweed Heads bypass.

In 2010, construction of Building B will commence. It is anticipated that 70% of Building B construction will be completed throughout 2010. Full expenditure for Building B is \$60m, thus construction—related expenditure for 2010 is estimated to be \$42m. Further, based on ratios attributable to Building A (Foundation Building) construction, it is estimated that 85% of all contractors working on Building B will reside within the Tweed—Gold Coast region. In

light of these estimates, a final 2010 construction expenditure figure of \$35.7m will be utilised in the study.

| New impact: Projected Direct Employment and Student Expenditure (2012)

Long-term proposals for the university involve further expansion of the Academic Precinct at the new Gold Coast (Beachside) campus (see Figure 4). This development will include the first dedicated Support and Ancillary Services building (E) which is required to meet the changing and evolving demands of the expanding campus. Future proposals for the campus also explore a possible expansion across the creek and biodiversity corridor into NSW if demand requires. At this point in time SCU intends to take an option on the 2.5 hectares of land in NSW. It is anticipated that this land will be used for student accommodation, a sports field and additional parking spaces. With this ongoing development comes further opportunity in terms of both increased student load and associated employment benefits. Estimated employment data and student load (projected for 2012) for all Tweed–Gold Coast locations of SCU were provided by the Office of Deputy Vice–Chancellor.

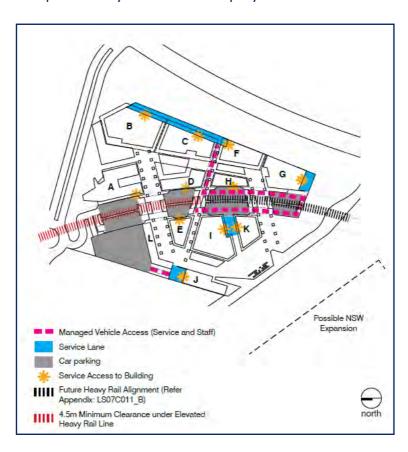


Figure 4: Plan of the Proposed Gold Coast (Beachside) Campus

3. PROJECTED DIRECT EMPLOYMENT IMPACTS (2010)

3.1 Projected Economic Impact of Direct Employment (2010) at SCU on Value of Regional Output

Tables 3 to 6 present the economic impact analysis resulting from direct staff employment (estimates) at SCU Tweed–Gold Coast locations on the regional economy.

The tables show columns for final demand, the industrial effect after the impact, the consumption effect following the impact, and the total effect according to: (1) Value of Regional Output, (2) Regional Employment, (3) Regional Household Incomes and (4) Regional Value Added. The tables also show type 1 and type 2 multipliers. These represent the multiplier which is applied to final demand in order to obtain the industrial and the consumption effects, respectively.

There are always flow—on effects arising from the actions of an industry or institution. It is important to take these flow—on effects into consideration when trying to gain an overall view of the economic impact of an institution such as SCU. These flow—ons can be identified using the multiplier effect. Milbourne *et al.* (1993 p.21) described the multiplier in the following way:

When a resident of a locality receives an increase in income, he or she spends some of that income and creates further income and employment in the locality. In the language of economics, the final or total effect is some multiple of the original spending injection (called the multiplier). The multiplier depends on how much each person spends out of each extra dollar. If each person spends the proportion C out of each extra dollar the final effect is 1/(1-C).

As Davis, Buultjens and Whelan (1996 p.33) explain:

In simple terms, a multiplier is a number by which the direct activity (say employment in agriculture) is multiplied to obtain the total level of economic activity (e.g. flow—on employment in the local area).

Table 3 presents data on the Tweed–Gold Coast campuses' employment impacts on the value of regional output.

Table 3 – Projected Economic Impact of Direct Employment (2010) at SCU on Value of Regional Output

Output	Direct Change Jobs	Direct Change Output (\$M)	Direct Effect (\$M)	Industrial Effect (\$M)	Consumption Effect (\$M)	Total (\$M)
Agriculture, forestry & fishing				\$0.012	\$0.159	\$0.171
Mining				\$0.009	\$0.021	\$0.030
Manufacturing				\$1.296	\$2.559	\$3.855
Electricity, gas & water supply				\$0.220	\$0.241	\$0.461
Construction				\$0.082	\$0.136	\$0.219
Wholesale trade				\$0.521	\$0.972	\$1.493
Retail trade				\$0.143	\$2.744	\$2.887
Accommodation, cafes & restaurants				\$0.174	\$1.192	\$1.366
Transport & storage				\$0.342	\$0.622	\$0.964
Communication services				\$0.331	\$0.457	\$0.788
Finance & insurance				\$0.426	\$1.033	\$1.458
Property & business services				\$1.086	\$1.598	\$2.684
Government administration & defence				\$0.112	\$0.057	\$0.169
Education	182		\$21.503	\$0.313	\$0.496	\$22.312
Health & community services				\$0.024	\$0.646	\$0.670
Cultural & recreational services				\$0.276	\$0.608	\$0.884
Personal & other services				\$0.032	\$0.354	\$0.386
TOTAL	182		\$21.503	\$5.401	\$13.894	\$40.798
				Type 1		Type 2
Multiplier				1.251		1.897

It can be seen that the 182 staff employed at SCU's Tweed–Gold Coast campuses and living in the study region are estimated to have a direct impact of \$21.503m on regional output. The direct increase in output is estimated to increase the demand for intermediate goods and services by \$5.401m. This represents a type 1 output multiplier of 1.251. These industrial effects include multiple rounds of flow–on effects, as servicing sectors increase

their own output and demand for local goods and services in response to the direct change to the economy.

The increases in direct and indirect output would typically correspond to the creation of jobs in the economy. Corresponding to this change in employment would be an increase in the total of wages and salaries paid to employees. A proportion of these wages and salaries are typically spent on consumption and a proportion of this expenditure is captured in the local economy. The consumption effects under this scenario are estimated at \$13.894m.

In summary, the total regional output from the university's staff, including all direct, industrial and consumption effects is estimated to be \$40.798m. This represents a type 2 output multiplier of 1.897.

3.2 Projected Economic Impact of Direct Employment (2010) at SCU on Total Employment

Table 4 presents data on the Tweed–Gold Coast campuses employment impacts on total employment in the region.

Table 4 - Projected Economic Impact of Direct Employment (2010) at SCU on Total Employment

Employment	Direct Change Jobs	Direct Change Output (\$M)	Direct Effect (Jobs)	Industrial Effect (Jobs)	Consumption Effect (Jobs)	Total (Jobs)
Agriculture, forestry & fishing				0	1	1
Mining				0	0	0
Manufacturing				3	5	8
Electricity, gas & water supply				0	0	1
Construction				0	0	1
Wholesale trade				1	3	4
Retail trade				1	24	25
Accommodation, cafes & restaurants				1	7	8
Transport & storage				1	2	3
Communication services				1	1	2
Finance & insurance				1	2	3
Property & business services				3	5	8
Government administration & defence				1	0	1
Education	182		182	3	4	189
Health & community services				0	6	6
Cultural & recreational services				1	3	4
Personal & other services				0	4	4
TOTAL	182		182	19	67	268
				Type 1		Type 2
Multiplier				1.104		1.473

Table 4 shows that while the direct estimated employment of 182 staff (whom reside in the region of analysis) is, in itself, a significant contributor to the regional economy, when the effect of multipliers is taken into account, the total number of regional jobs linked to SCU's presence within the region is estimated at 268 jobs. For example, the number of jobs supported by SCU's presence within the retail sector is 25. Other employment impacts can also be observed within manufacturing (8); accommodation, cafes & restaurants (8); and property & business services (8) sectors.

3.3 Projected Economic Impact of Direct Employment (2010) at SCU on Household Income

Households are a key sector of the economy and comprise the regional population which consume the output of the production and services organised by the trading enterprises sector. The impact of SCU's Tweed–Gold Coast campuses on household income is shown in Table 5.

Table 5 – Projected Economic Impact of Direct Employment (2010) at SCU on Household Income

Wages and Salaries	Direct Change Jobs	Direct Change Output (\$M)	Direct Effect (\$M)	Industrial Effect (\$M)	Consumption Effect (\$M)	Total (\$M)
Agriculture, forestry & fishing				\$0.002	\$0.026	\$0.028
Mining				\$0.001	\$0.002	\$0.003
Manufacturing				\$0.207	\$0.360	\$0.567
Electricity, gas & water supply				\$0.030	\$0.037	\$0.067
Construction				\$0.013	\$0.021	\$0.033
Wholesale trade				\$0.133	\$0.252	\$0.384
Retail trade				\$0.049	\$0.884	\$0.933
Accommodation, cafes & restaurants				\$0.041	\$0.280	\$0.321
Transport & storage				\$0.067	\$0.124	\$0.192
Communication services				\$0.054	\$0.074	\$0.128
Finance & insurance				\$0.134	\$0.322	\$0.456
Property & business services				\$0.299	\$0.421	\$0.720
Government administration & defence				\$0.054	\$0.027	\$0.081
Education	182		\$14.656	\$0.213	\$0.338	\$15.207
Health & community services				\$0.016	\$0.408	\$0.424
Cultural & recreational services				\$0.081	\$0.115	\$0.197
Personal & other services				\$0.012	\$0.165	\$0.176
TOTAL	182		\$14.656	\$1.406	\$3.855	\$19.916
				Type 1		Type 2
Multiplier				1.096		1.359

Table 5 shows that \$14.656m in wages and salaries will be paid directly to households in the Tweed–Gold Coast region in 2010. A proportion of these wages and salaries are typically spent on consumption and a proportion of this expenditure is captured in the local economy. The consumption effects under this scenario are expected to further boost employment in sectors such as retail therefore further increasing wages and salaries by \$3.855m. The total regional impact on household income is \$19.916m. This represents a type 2 household income multiplier of 1.359.

3.4 Projected Economic Impact of Direct Employment (2010) at SCU on Regional Value Added

The value of the annual output of an enterprise is the sum of its annual sales to other enterprises together with the change over the year in the value of its stocks of finished or semi–finished goods. This change represents the enterprise's investment expenditure on stocks which may be positive or negative. The value of the annual inputs used up in the production of the annual output is the sum of annual purchases from other enterprises and the change over the year in the value of the stock of inputs. Annual value added of enterprises within the region is therefore equal to sales of output during the year plus net additions to stocks less the purchase of intermediate goods during the year. By analogy, with the value added of a trading enterprise, the value added of the government sector is defined as the value of collective goods and services provided *less* the value of goods purchased from trading enterprises. These are regarded as intermediate goods from the viewpoint of the government. For financial enterprises, the output may be defined in terms of the value of the services they provide. All production within a regional economy occurs in these three sectors.

Annual output is valued at market prices, directly in the case of trading enterprises, and indirectly in the case of the government and financial enterprises. The sum of the value added of these three sectors within the region is equivalent to Gross Regional Product.

Table 6 – Projected Economic Impact of Direct Employment (2010) at SCU on Regional Value Added

Value–Added	Direct Change Jobs	Direct Change Output (\$M)	Direct Effect (\$M)	Industrial Effect (\$M)	Consumption Effect (\$M)	Total (\$M)
Agriculture, forestry & fishing				\$0.007	\$0.092	\$0.099
Mining				\$0.005	\$0.011	\$0.016
Manufacturing				\$0.344	\$0.616	\$0.960
Electricity, gas & water supply				\$0.110	\$0.126	\$0.236
Construction				\$0.028	\$0.045	\$0.073
Wholesale trade				\$0.225	\$0.431	\$0.657
Retail trade				\$0.074	\$1.384	\$1.458
Accommodation, cafes & restaurants				\$0.070	\$0.479	\$0.548
Transport & storage				\$0.137	\$0.249	\$0.386
Communication services				\$0.165	\$0.228	\$0.393
Finance & insurance				\$0.295	\$0.664	\$0.959
Property & business services				\$0.502	\$0.734	\$1.236
Government administration & defence				\$0.062	\$0.031	\$0.093
Education	182		\$16.246	\$0.237	\$0.374	\$16.858
Health & community services				\$0.019	\$0.500	\$0.519
Cultural & recreational services				\$0.123	\$0.201	\$0.324
Personal & other services				\$0.016	\$0.207	\$0.223
TOTAL	182		\$16.246	\$2.419	\$6.371	\$25.037
				Type 1		Type 2
Multiplier				1.149		1.541

In summary, the component of value added within the Tweed–Gold Coast region attributable to SCU staff in 2010 is estimated at \$25.037m. The main value added impacts were experienced in the education (\$16.858m), retail (\$1.458m), property & business services (\$1.236m) and manufacturing (\$0.960m) sectors.

4. PROJECTED STUDENT EXPENDITURE IMPACTS (2010)

Students are the consumers of the majority of the output of the education sector. Generally, the consumers of a firm's output are not directly considered when modelling the impact of the firm on an economy. Consumers are assumed to exist in the economy prior to the firm's (changed) output and therefore do not need to be added to the model beyond the output of the firm in which they consume.

In the case of students from outside the region, however, the above assumption needs to be relaxed. Non–local students come to the area because of SCU's presence, and would not otherwise reside in the region. It is appropriate to include not only the students' consumption of education services but their consumption of other goods and services in the region. For the purposes of this exercise, only non–local students have been included in the calculations.

As stated previously, it is likely a percentage of local students would, in fact, leave the region to attend a university elsewhere if SCU were not present. However, it is not possible to ascertain how many would leave the region so all local students have been excluded from the analysis to suggest an underestimate of the SCU student impact.

The consumption of services other than education by these non–local students, based at one of three Tweed–Gold Coast teaching campuses (Riverside, Lakeside and Beachside) was established as follows:

1. The number of non-local students was initially determined, based on information provided by the Office of Deputy Vice-Chancellor. An estimated Equivalent Full-Time Student Load (EFTSL) model, a measure of the standard annual study workload of a student undertaking a full year of study on a full-time basis, was used as the basis of student numbers. It was determined that in 2010 there will be an estimated 424 non-local students at SCU's Tweed-Gold Coast campuses, with an estimated 696 non-local students in 2012.

- A student's typical consumption pattern for services and products other than in the education sector was established. For this exercise, the average expenditure for students, as determined by the university (SCU Costs Brochure, January 2009) was used. Student expenditure was \$9.898 million.
- 3. Next, the two figures above were multiplied to obtain total non–education consumption by students.
- 4. Finally, the total consumption figures were put into the model as a direct expenditure/output impact in the appropriate sectors.

Tables 7 through 10 present the economic impact analysis resulting from non–local SCU student expenditure on the regional economy. Each table show columns for final demand, the industrial effect after the impact, the consumption effect following the impact, and the total effect according to: (1) Value of Regional Output, (2) Regional Employment, (3) Regional Household Incomes and (4) Regional Value Added.

4.1 Projected Economic Impact of Non-Local Student Expenditure (2010) at SCU on Value of Regional Output

Table 7 shows the total impact of student expenditure on regional output according to industry sector. The total estimated impact, including type 1 and 2 multipliers, within the Tweed–Gold Coast region is \$9.898m.

Table 7 – Projected Economic Impact of Non–Local Student Expenditure (2010) at SCU on Value of Regional Output

Output	Direct Change Jobs	Direct Change Output (\$M)	Direct Effect (\$M)	Industrial Effect (\$M)	Consumption Effect (\$M)	Total (\$M)
Agriculture, forestry & fishing				\$0.020	\$0.020	\$0.039
Mining				\$0.006	\$0.003	\$0.008
Manufacturing				\$0.424	\$0.316	\$0.740
Electricity, gas & water supply				\$0.047	\$0.030	\$0.076
Construction				\$0.080	\$0.017	\$0.097
Wholesale trade				\$0.177	\$0.120	\$0.297
Retail trade		\$1.717	\$1.717	\$0.098	\$0.338	\$2.154
Accommodation, cafes & restaurants				\$0.092	\$0.147	\$0.239
Transport & storage		\$0.508	\$0.508	\$0.186	\$0.077	\$0.771
Communication services				\$0.135	\$0.056	\$0.191
Finance & insurance				\$0.183	\$0.127	\$0.310
Property & business services		\$1.950	\$1.950	\$1.394	\$0.197	\$3.541
Government administration & defence				\$0.025	\$0.007	\$0.032
Education				\$0.026	\$0.061	\$0.087
Health & community services				\$0.006	\$0.080	\$0.085
Cultural & recreational services		\$0.890	\$0.890	\$0.211	\$0.075	\$1.176
Personal & other services				\$0.011	\$0.044	\$0.054
TOTAL		\$5.065	\$5.065	\$3.119	\$1.714	\$9.898
				Type 1		Type 2
Multiplier				1.616		1.954

Major value of output impacts are experienced by the sectors of property & business services (\$3.541m), retail trade (\$2.154m) and cultural & recreational services (\$1.176m).

4.2 Projected Economic Impact of Non-Local Student Expenditure (2010) at SCU on Total Employment

Table 8 shows the total employment within the Tweed–Gold Coast region due to student expenditure patterns. It can be seen that student expenditure is expected to support a total of 43 jobs in the region.

Table 8 – Projected Economic Impact of Non–Local Student Expenditure (2010) at SCU on Total Employment

Employment	Direct Change Jobs	Direct Change Output (\$M)	Direct Effect (Jobs)	Industrial Effect (Jobs)	Consumption Effect (Jobs)	Total (Jobs)
Agriculture, forestry & fishing				0	0	0
Mining				0	0	0
Manufacturing				1	1	1
Electricity, gas & water supply				0	0	0
Construction				0	0	0
Wholesale trade				0	0	1
Retail trade		\$1.717	15	1	3	19
Accommodation, cafes & restaurants				1	1	1
Transport & storage		\$0.508	1	1	0	2
Communication services				0	0	0
Finance & insurance				0	0	1
Property & business services		\$1.950	5	4	1	9
Government administration & defence				0	0	0
Education				0	1	1
Health & community services				0	1	1
Cultural & recreational services		\$0.890	4	1	0	5
Personal & other services				0	0	1
TOTAL		\$5.065	25	9	9	43
		•	•	Type 1		Type 2
Multiplier				1.360		1.720

The major employment impacts, according to industry sector within the Tweed–Gold Coast region, can be seen in retail trade (19 jobs), property & business services (9 jobs), and cultural & recreational services (5 jobs).

4.3 Projected Economic Impact of Non-Local Student Expenditure (2010) at SCU on Household Income

Table 9 shows the total regional household income according to industry sector within the region resulting from student expenditure on goods and services. The total estimated impact on household income within the Tweed–Gold Coast region is \$2.457m.

Table 9 – Projected Economic Impact of Non–Local Student Expenditure (2010) at SCU on Household Income

Wages and Salaries	Direct Change Jobs	Direct Change Output (\$M)	Direct Effect (\$M)	Industrial Effect (\$M)	Consumption Effect (\$M)	Total (\$M)
Agriculture, forestry & fishing				\$0.003	\$0.003	\$0.006
Mining				\$0.001	\$0.000	\$0.001
Manufacturing				\$0.062	\$0.044	\$0.106
Electricity, gas & water supply				\$0.008	\$0.005	\$0.012
Construction				\$0.012	\$0.003	\$0.014
Wholesale trade				\$0.043	\$0.031	\$0.074
Retail trade		\$1.717	\$0.556	\$0.034	\$0.109	\$0.699
Accommodation, cafes & restaurants				\$0.022	\$0.035	\$0.056
Transport & storage		\$0.508	\$0.100	\$0.036	\$0.015	\$0.151
Communication services				\$0.022	\$0.009	\$0.031
Finance & insurance				\$0.055	\$0.040	\$0.095
Property & business services		\$1.950	\$0.447	\$0.338	\$0.052	\$0.837
Government administration & defence				\$0.012	\$0.003	\$0.016
Education				\$0.018	\$0.042	\$0.060
Health & community services				\$0.004	\$0.050	\$0.054
Cultural & recreational services		\$0.890	\$0.171	\$0.035	\$0.014	\$0.220
Personal & other services				\$0.004	\$0.020	\$0.024
TOTAL		\$5.065	\$1.274	\$0.707	\$0.476	\$2.457
				Type 1		Type 2
Multiplier				1.555		1.929

As shown, there have been notable impacts on regional household income in the sectors of property & business services (\$0.837m) and retail trade (\$0.699m).

4.4 Projected Economic Impact of Non-Local Student Expenditure (2010) at SCU on Regional Value Added

Table 10 shows that the non–local student expenditure impact on total regional value added for the Tweed–Gold Coast region is estimated at \$4.378m.

Table 10 – Projected Economic Impact of Non–Local Student Expenditure (2010) at SCU on Regional Value Added

Value-Added	Direct Change Jobs	Direct Change Output (\$M)	Direct Effect (\$M)	Industrial Effect (\$M)	Consumption Effect (\$M)	Total (\$M)
Agriculture, forestry & fishing				\$0.011	\$0.011	\$0.023
Mining				\$0.003	\$0.001	\$0.005
Manufacturing				\$0.106	\$0.076	\$0.182
Electricity, gas & water supply				\$0.025	\$0.016	\$0.040
Construction				\$0.026	\$0.006	\$0.031
Wholesale trade				\$0.072	\$0.053	\$0.125
Retail trade		\$1.717	\$0.868	\$0.050	\$0.171	\$1.089
Accommodation, cafes & restaurants				\$0.037	\$0.059	\$0.096
Transport & storage		\$0.508	\$0.204	\$0.075	\$0.031	\$0.309
Communication services				\$0.067	\$0.028	\$0.095
Finance & insurance				\$0.119	\$0.082	\$0.201
Property & business services		\$1.950	\$0.889	\$0.637	\$0.091	\$1.617
Government administration & defence				\$0.014	\$0.004	\$0.018
Education				\$0.020	\$0.046	\$0.066
Health & community services				\$0.004	\$0.062	\$0.066
Cultural & recreational services		\$0.890	\$0.296	\$0.063	\$0.025	\$0.385
Personal & other services				\$0.005	\$0.025	\$0.031
TOTAL		\$5.065	\$2.257	\$1.335	\$0.786	\$4.378
				Type 1		Type 2
Multiplier				1.592		1.940

The major sectoral value added impacts from student expenditure in the region occur in property & business services (\$1.617m) and retail trade (\$1.089m).

5. PROJECTED CONSTRUCTION IMPACTS (2010)

Planned expenditure on campus construction will generate significant direct and indirect economic impacts. As stated previously, it is estimated that final 2010 construction expenditure will be \$35.7m.

5.1 Projected Economic Impact of SCU Campus Construction Expenditure (2010) on Value of Regional Output

In 2010, as Table 11 indicates, the \$35.7m campus construction costs at the Beachside Campus are estimated to generate \$74.588m in regional output.

Table 11 – Projected Economic Impact of SCU Campus Construction Expenditure (2010) on Value of Regional Output

Output	Direct Change Jobs	Direct Change Output (\$M)	Direct Effect (\$M)	Industrial Effect (\$M)	Consumption Effect (\$M)	Total (\$M)
Agriculture, forestry & fishing				\$0.051	\$0.108	\$0.159
Mining				\$0.183	\$0.014	\$0.197
Manufacturing				\$8.196	\$1.748	\$9.944
Electricity, gas & water supply				\$0.204	\$0.165	\$0.368
Construction		\$35.700	\$35.700	\$9.000	\$0.093	\$44.794
Wholesale trade				\$1.349	\$0.664	\$2.013
Retail trade				\$0.341	\$1.874	\$2.215
Accommodation, cafes & restaurants				\$0.238	\$0.814	\$1.053
Transport & storage				\$1.324	\$0.425	\$1.748
Communication services				\$0.435	\$0.312	\$0.747
Finance & insurance				\$1.927	\$0.705	\$2.632
Property & business services				\$5.628	\$1.091	\$6.719
Government administration & defence				\$0.153	\$0.039	\$0.192
Education				\$0.080	\$0.339	\$0.419
Health & community services				\$0.009	\$0.441	\$0.451
Cultural & recreational services				\$0.230	\$0.415	\$0.645
Personal & other services				\$0.050	\$0.242	\$0.292
TOTAL		\$35.700	\$35.700	\$29.399	\$9.489	\$74.588
				Type 1		Type 2
Multiplier				1.824		2.089

The sectors other than construction to benefit most from the construction taking place at the Beachside Campus are manufacturing (\$9.944m) and property & business services (\$6.719m).

5.2 Projected Economic Impact of SCU Campus Construction Expenditure (2010) on Total Employment

The construction impacts on employment in the Tweed–Gold Coast region are estimated to be 220 local jobs (Table 12). There are 122 jobs created in the construction sector with a further 19 jobs created in each of the manufacturing, retail trade, and property & business services sectors.

Table 12 – Projected Economic Impact of SCU Campus Construction Expenditure (2010) on Total Employment

Employment	Direct Change Jobs	Direct Change Output (\$M)	Direct Effect (Jobs)	Industrial Effect (Jobs)	Consumption Effect (Jobs)	Total (Jobs)
Agriculture, forestry & fishing				0	1	1
Mining				0	0	0
Manufacturing				15	3	19
Electricity, gas & water supply				0	0	0
Construction		\$35.700	84	38	0	122
Wholesale trade				4	2	6
Retail trade				3	16	19
Accommodation, cafes & restaurants				1	5	6
Transport & storage				4	1	5
Communication services				1	1	2
Finance & insurance				4	2	5
Property & business services				16	3	19
Government administration & defence				1	0	1
Education				1	3	4
Health & community services				0	4	4
Cultural & recreational services				1	2	3
Personal & other services				1	3	3
TOTAL		\$35.700	84	91	45	220
				Type 1		Type 2
Multiplier				2.083		2.619

5.3 Projected Economic Impact of SCU Campus Construction Expenditure (2010) on Household Income

Table 13 includes the impact of construction on household income in the Tweed–Gold Coast region. A total of \$13.602m is generated with the major impacts in the construction, manufacturing, and property & business services sectors.

Table 13 – Projected Economic Impact of SCU Campus Construction Expenditure (2010) on Total Employment

Wages and Salaries	Direct Change Jobs	Direct Change Output (\$M)	Direct Effect (\$M)	Industrial Effect (\$M)	Consumption Effect (\$M)	Total (\$M)
Agriculture, forestry & fishing				\$0.011	\$0.018	\$0.029
Mining				\$0.028	\$0.001	\$0.030
Manufacturing				\$1.435	\$0.246	\$1.681
Electricity, gas & water supply				\$0.031	\$0.025	\$0.057
Construction		\$35.700	\$4.647	\$1.634	\$0.014	\$6.295
Wholesale trade				\$0.347	\$0.172	\$0.518
Retail trade				\$0.125	\$0.604	\$0.729
Accommodation, cafes & restaurants				\$0.056	\$0.192	\$0.248
Transport & storage				\$0.270	\$0.085	\$0.355
Communication services				\$0.071	\$0.051	\$0.121
Finance & insurance				\$0.647	\$0.220	\$0.867
Property & business services				\$1.469	\$0.287	\$1.757
Government administration & defence				\$0.073	\$0.019	\$0.092
Education				\$0.055	\$0.231	\$0.286
Health & community services				\$0.006	\$0.278	\$0.285
Cultural & recreational services				\$0.040	\$0.079	\$0.119
Personal & other services				\$0.024	\$0.112	\$0.136
TOTAL	•	\$35.700	\$4.647	\$6.322	\$2.633	\$13.602
				Type 1		Type 2
Multiplier				2.361		2.927

5.4 Projected Economic Impact of SCU Campus Construction Expenditure (2010) on Regional Value Added

The regional value added arising from construction on the Beachside Campus is \$26.378m (Table 14). Close to \$14m is generated in the construction sector, \$3.102m in the property & business services sector, \$2.784m in manufacturing and \$1.472m in finance & insurance.

Table 14 – Projected Economic Impact of SCU Campus Construction Expenditure (2010) on Regional Value Added

Value-Added	Direct Change Jobs	Direct Change Output (\$M)	Direct Effect (\$M)	Industrial Effect (\$M)	Consumption Effect (\$M)	Total (\$M)
Agriculture, forestry & fishing		1 - 1 (+)	(+ /	\$0.029	\$0.063	\$0.092
Mining				\$0.101	\$0.008	\$0.109
Manufacturing				\$2.363	\$0.421	\$2.784
Electricity, gas & water supply				\$0.107	\$0.086	\$0.193
Construction		\$35.700	\$10.550	\$3.378	\$0.031	\$13.959
Wholesale trade				\$0.592	\$0.294	\$0.886
Retail trade				\$0.177	\$0.945	\$1.123
Accommodation, cafes & restaurants				\$0.096	\$0.327	\$0.423
Transport & storage				\$0.545	\$0.170	\$0.715
Communication services				\$0.217	\$0.156	\$0.373
Finance & insurance				\$1.018	\$0.454	\$1.472
Property & business services				\$2.600	\$0.501	\$3.102
Government administration & defence				\$0.084	\$0.021	\$0.106
Education				\$0.061	\$0.256	\$0.317
Health & community services				\$0.008	\$0.341	\$0.349
Cultural & recreational services				\$0.071	\$0.137	\$0.208
Personal & other services				\$0.030	\$0.141	\$0.171
TOTAL		\$35.700	\$10.550	\$11.476	\$4.351	\$26.378
				Type 1		Type 2
Multiplier				2.088		2.500

6. PROJECTED DIRECT EMPLOYMENT IMPACTS (2012)

It is anticipated that there will be relatively substantial and rapid expansion of the Academic Precinct at the new Gold Coast (Beachside) campus. This expansion will be accompanied by an increase in the number of staff and students.

6.1 Projected Economic Impact of Direct Employment (2012) at SCU on Value of Regional Output

In 2012, it is projected that there will be 281 staff directly employed at the Tweed–Gold Coast Campuses (whom reside in the region) generating an estimated \$62.991m in regional output (Table 15). Total regional output in 2010 resulting from 182 staff (whom reside in the region) was estimated to be \$40.798 million.

Table 15 - Projected Economic Impact of Direct Employment (2012) at SCU on Value of Regional Output

Output	Direct Change Jobs	Direct Change Output (\$M)	Direct Effect (\$M)	Industrial Effect (\$M)	Consumption Effect (\$M)	Total (\$M)
Agriculture, forestry & fishing				\$0.018	\$0.245	\$0.263
Mining				\$0.015	\$0.032	\$0.046
Manufacturing				\$2.001	\$3.952	\$5.952
Electricity, gas & water supply				\$0.340	\$0.372	\$0.712
Construction				\$0.127	\$0.210	\$0.337
Wholesale trade				\$0.805	\$1.500	\$2.305
Retail trade				\$0.221	\$4.236	\$4.458
Accommodation, cafes & restaurants				\$0.269	\$1.841	\$2.109
Transport & storage				\$0.529	\$0.960	\$1.489
Communication services				\$0.512	\$0.706	\$1.217
Finance & insurance				\$0.657	\$1.594	\$2.252
Property & business services				\$1.677	\$2.467	\$4.144
Government administration & defence				\$0.174	\$0.087	\$0.261
Education	281		\$33.200	\$0.484	\$0.765	\$34.449
Health & community services				\$0.037	\$0.997	\$1.035
Cultural & recreational services				\$0.426	\$0.939	\$1.365
Personal & other services				\$0.049	\$0.547	\$0.596
TOTAL	281		\$33.200	\$8.339	\$21.451	\$62.991
				Type 1		Type 2
Multiplier				1.251		1.897

6.2 Projected Economic Impact of Direct Employment (2012) at SCU on Total Employment

Table 16 indicates that the direct employment of 281 staff (whom reside in the region) expected in 2012 at the combined Tweed–Gold Coast locations of SCU resulted in a further 133 jobs being created in the region. A total of 414 jobs are estimated to be created in 2012 compared to 268 jobs in 2010.

Table 16 – Projected Economic Impact of Direct Employment (2012) at SCU on Total Employment

Employment	Direct Change Jobs	Direct Change Output (\$M)	Direct Effect (Jobs)	Industrial Effect (Jobs)	Consumption Effect (Jobs)	Total (Jobs)
Agriculture, forestry & fishing				0	1	1
Mining				0	0	0
Manufacturing				4	8	12
Electricity, gas & water supply				0	0	1
Construction				0	1	1
Wholesale trade				2	4	6
Retail trade				2	36	38
Accommodation, cafes & restaurants				2	11	13
Transport & storage				2	3	4
Communication services				1	2	3
Finance & insurance				2	4	5
Property & business services				5	7	13
Government administration & defence				1	0	1
Education	281		281	4	6	292
Health & community services				0	9	9
Cultural & recreational services				2	4	6
Personal & other services				1	6	7
TOTAL	281		281	29	104	414
				Type 1		Type 2
Multiplier				1.103		1.473

6.3 Projected Economic Impact of Direct Employment (2012) at SCU on Household Income

Direct employment at SCU in 2012 is estimated to contribute \$30.750m to local household incomes. In 2010, the household impact was estimated to be \$19.916m.

Table 17 – Projected Economic Impact of Direct Employment (2012) at SCU on Household Income

Wages and Salaries	Direct Change Jobs	Direct Change Output (\$M)	Direct Effect (\$M)	Industrial Effect (\$M)	Consumption Effect (\$M)	Total (\$M)
Agriculture, forestry & fishing				\$0.003	\$0.040	\$0.043
Mining				\$0.001	\$0.003	\$0.005
Manufacturing				\$0.320	\$0.555	\$0.875
Electricity, gas & water supply				\$0.046	\$0.057	\$0.103
Construction				\$0.020	\$0.032	\$0.052
Wholesale trade				\$0.205	\$0.388	\$0.593
Retail trade				\$0.075	\$1.365	\$1.440
Accommodation, cafes & restaurants				\$0.063	\$0.433	\$0.496
Transport & storage				\$0.104	\$0.192	\$0.296
Communication services				\$0.083	\$0.114	\$0.197
Finance & insurance				\$0.206	\$0.498	\$0.704
Property & business services				\$0.462	\$0.649	\$1.112
Government administration & defence				\$0.083	\$0.042	\$0.125
Education	281		\$22.628	\$0.330	\$0.522	\$23.479
Health & community services				\$0.025	\$0.629	\$0.654
Cultural & recreational services				\$0.126	\$0.178	\$0.303
Personal & other services				\$0.018	\$0.254	\$0.272
TOTAL	281		\$22.628	\$2.170	\$5.952	\$30.750
				Type 1		Type 2
Multiplier				1.096		1.359

6.4 Projected Economic Impact of Direct Employment (2012) at SCU on Regional Value Added

The value added within the Tweed–Gold Coast region attributable to SCU employment in 2012 is estimated to \$38.656m. In 2010, it was estimated at \$25.037m.

Table 18 – Projected Economic Impact of Direct Employment (2012) at SCU on Regional Value Added

Value-Added	Direct Change Jobs	Direct Change Output (\$M)	Direct Effect (\$M)	Industrial Effect (\$M)	Consumption Effect (\$M)	Total (\$M)
Agriculture, forestry & fishing				\$0.010	\$0.142	\$0.152
Mining				\$0.008	\$0.017	\$0.025
Manufacturing				\$0.531	\$0.951	\$1.482
Electricity, gas & water supply				\$0.169	\$0.194	\$0.364
Construction				\$0.043	\$0.070	\$0.112
Wholesale trade				\$0.348	\$0.666	\$1.014
Retail trade				\$0.114	\$2.137	\$2.251
Accommodation, cafes & restaurants				\$0.108	\$0.739	\$0.847
Transport & storage				\$0.212	\$0.384	\$0.596
Communication services				\$0.255	\$0.352	\$0.607
Finance & insurance				\$0.455	\$1.025	\$1.480
Property & business services				\$0.775	\$1.134	\$1.909
Government administration & defence				\$0.095	\$0.048	\$0.143
Education	281		\$25.084	\$0.365	\$0.578	\$26.027
Health & community services				\$0.030	\$0.772	\$0.801
Cultural & recreational services				\$0.190	\$0.310	\$0.500
Personal & other services				\$0.025	\$0.319	\$0.344
TOTAL	281		\$25.084	\$3.735	\$9.837	\$38.656
			,	Type 1		Type 2
Multiplier				1.149		1.541

7. NEW IMPACT: PROJECTED STUDENT EXPENDITURE (2012)

Projected student expenditure will increase as the campus size and student numbers grow over time. It is expected that the 2012 ratio of local versus non–local students will remain the same as in 2008. It is assumed that approximately 50% of students (696 students) studying at an SCU Tweed–Gold Coast campus in 2012 will come from a region outside that in which the campuses are located. This ratio has been calculated based on student demographic data provided by the Office of Deputy Vice–Chancellor. As mentioned previously, an estimated Equivalent Full–Time Student Load (EFTSL) model was used as the basis of student numbers.

7.1 Projected Economic Impact of Non-Local Student Expenditure (2012) at SCU on Value of Regional Output

In 2012, projected non–local student expenditure is estimated to generate \$16.248m in output (Table 19). The total student expenditure on regional output in 2010 was estimated to be \$9.898m.

Table 19 – Projected Economic Impact of Non–Local Student Expenditure (2012) at SCU on Value of Regional Output

Output	Direct Change Jobs	Direct Change Output (\$M)	Direct Effect (\$M)	Industrial Effect (\$M)	Consumption Effect (\$M)	Total (\$M)
Agriculture, forestry & fishing				\$0.032	\$0.032	\$0.064
Mining				\$0.010	\$0.004	\$0.014
Manufacturing				\$0.696	\$0.518	\$1.215
Electricity, gas & water supply				\$0.076	\$0.049	\$0.125
Construction				\$0.132	\$0.028	\$0.159
Wholesale trade				\$0.290	\$0.197	\$0.487
Retail trade		\$2.818	\$2.818	\$0.161	\$0.556	\$3.535
Accommodation, cafes & restaurants				\$0.151	\$0.241	\$0.392
Transport & storage		\$0.835	\$0.835	\$0.306	\$0.126	\$1.267
Communication services				\$0.221	\$0.093	\$0.314
Finance & insurance				\$0.300	\$0.209	\$0.509
Property & business services		\$3.201	\$3.201	\$2.288	\$0.324	\$5.813
Government administration & defence				\$0.042	\$0.011	\$0.053
Education				\$0.043	\$0.100	\$0.143
Health & community services				\$0.009	\$0.131	\$0.140
Cultural & recreational services		\$1.461	\$1.461	\$0.346	\$0.123	\$1.930
Personal & other services				\$0.017	\$0.072	\$0.089
TOTAL		\$8.315	\$8.315	\$5.120	\$2.814	\$16.248
				Type 1		Type 2
Multiplier				1.616		1.954

7.2 Projected Economic Impact of Non-Local Student Expenditure (2012) at SCU on Total Employment

Table 20 shows that the estimated total employment within the Tweed–Gold Coast region due to student expenditure patterns in 2012 is 70 jobs. In 2010, the estimated impact was 43 jobs in the region.

Table 20 – Projected Economic Impact of Non–Local Student Expenditure (2012) at SCU on Total Employment

Employment	Direct Change Jobs	Direct Change Output (\$M)	Direct Effect (Jobs)	Industrial Effect (Jobs)	Consumption Effect (Jobs)	Total (Jobs)
Agriculture, forestry & fishing				0	0	0
Mining				0	0	0
Manufacturing				1	1	2
Electricity, gas & water supply				0	0	0
Construction				0	0	0
Wholesale trade				1	1	1
Retail trade		\$2.818	24	2	5	31
Accommodation, cafes & restaurants				1	1	2
Transport & storage		\$0.835	2	1	0	4
Communication services				1	0	1
Finance & insurance				1	0	1
Property & business services		\$3.201	8	6	1	15
Government administration & defence				0	0	0
Education				0	1	1
Health & community services				0	1	1
Cultural & recreational services		\$1.461	6	1	1	8
Personal & other services				0	1	1
TOTAL		\$8.315	41	15	14	70
	•	•		Type 1		Type 2
Multiplier				1.366		1.707

7.3 Projected Economic Impact of Non-Local Student Expenditure (2012) at SCU on Household Income

The total estimated impact on household income within the Tweed–Gold Coast region from student expenditure in 2012 is estimated to be \$4.033m (Table 21). The total estimated impact on household income within the Tweed–Gold Coast region in 2010 was estimated to be \$2.457m.

Table 21 – Projected Economic Impact of Non–Local Student Expenditure (2012) at SCU on Household Income

Wages and Salaries	Direct Change Jobs	Direct Change Output (\$M)	Direct Effect (\$M)	Industrial Effect (\$M)	Consumption Effect (\$M)	Total (\$M)
Agriculture, forestry & fishing				\$0.005	\$0.005	\$0.010
Mining				\$0.001	\$0.000	\$0.001
Manufacturing				\$0.101	\$0.073	\$0.174
Electricity, gas & water supply				\$0.012	\$0.007	\$0.020
Construction				\$0.019	\$0.004	\$0.023
Wholesale trade				\$0.070	\$0.051	\$0.121
Retail trade		\$2.818	\$0.912	\$0.056	\$0.179	\$1.147
Accommodation, cafes & restaurants				\$0.035	\$0.057	\$0.092
Transport & storage		\$0.835	\$0.164	\$0.059	\$0.025	\$0.248
Communication services				\$0.036	\$0.015	\$0.051
Finance & insurance				\$0.091	\$0.065	\$0.156
Property & business services		\$3.201	\$0.734	\$0.555	\$0.085	\$1.375
Government administration & defence				\$0.020	\$0.005	\$0.026
Education				\$0.029	\$0.068	\$0.098
Health & community services				\$0.006	\$0.083	\$0.089
Cultural & recreational services		\$1.461	\$0.280	\$0.058	\$0.023	\$0.361
Personal & other services				\$0.007	\$0.033	\$0.040
TOTAL		\$8.315	\$2.091	\$1.161	\$0.781	\$4.033
				Type 1		Type 2
Multiplier				1.555		1.929

7.4 Projected Economic Impact of Non-Local Student Expenditure (2012) at SCU on Regional Value Added

Table 22 shows that the student expenditure impact on total regional value added for the Tweed–Gold Coast region in 2012 is estimated to be \$7.187m. This is an increase on the estimated \$4.378m value added in 2010.

Table 22 – Projected Economic Impact of Non–Local Student Expenditure (2012) at SCU on Regional Value Added

Value-Added	Direct Change Jobs	Direct Change Output (\$M)	Direct Effect (\$M)	Industrial Effect (\$M)	Consumption Effect (\$M)	Total (\$M)
Agriculture, forestry & fishing				\$0.019	\$0.019	\$0.037
Mining				\$0.005	\$0.002	\$0.007
Manufacturing				\$0.174	\$0.125	\$0.299
Electricity, gas & water supply				\$0.041	\$0.025	\$0.066
Construction				\$0.042	\$0.009	\$0.051
Wholesale trade				\$0.118	\$0.087	\$0.205
Retail trade		\$2.818	\$1.424	\$0.083	\$0.280	\$1.787
Accommodation, cafes & restaurants				\$0.061	\$0.097	\$0.157
Transport & storage		\$0.835	\$0.335	\$0.123	\$0.050	\$0.508
Communication services				\$0.110	\$0.046	\$0.156
Finance & insurance				\$0.195	\$0.134	\$0.330
Property & business services		\$3.201	\$1.459	\$1.046	\$0.149	\$2.654
Government administration & defence				\$0.023	\$0.006	\$0.029
Education				\$0.033	\$0.076	\$0.108
Health & community services				\$0.007	\$0.101	\$0.108
Cultural & recreational services		\$1.461	\$0.487	\$0.104	\$0.041	\$0.631
Personal & other services				\$0.009	\$0.042	\$0.051
TOTAL		\$8.315	\$3.705	\$2.192	\$1.290	\$7.187
				Type 1		Type 2
Multiplier				1.592		1.940

8. SOUTHERN CROSS UNIVERSITY & COMMUNITY ENGAGEMENT: TWEED-GOLD COAST, AND SOUTH EAST QUEENSLAND

In addition to its valuable economic and educational roles, Southern Cross University also plays other important roles within the local community of the Tweed–Gold Coast and the wider South East Queensland region. SCU has a major commitment to the local community as shown in the university's Mission Statement where this commitment is given the highest priority.

8.1 SCU's Strategic Plan: Regional Engagement Objective

SCU's strategic plan shows that the university values constructive engagement with the local region, stakeholders and governments. The university is committed to the local region and engages with it across all facets of its growth and development.

The SCU Regional Engagement Objective states that SCU will take a prime role in the intellectual, economic, environmental, social and cultural development of our region. This objective demonstrates SCU's commitment to regional economic prosperity, social and cultural wellbeing and environmental sustainability. The SCU Regional Engagement Functional Plan identifies five key approaches to achieving this objective:

- The design and delivery of internationally significant and regionally relevant teaching,
 learning and research.
- The Office of Regional Engagement (ORE) which proactively links regional partners to leverage the skills, capacity and networks of the university and its communities, as well as facilitating communication and monitoring activity.
- The establishment of partnerships that seek to recognise the value and importance of two—way interaction between SCU's internal and external stakeholders and which will enhance regional growth, sustain the environment and enhance social wellbeing.
- The encouragement of staff engagement activities and recognition of their efforts.

 The development of a whole-of-university, campus and location specific focus to satisfy the needs of the community and consolidate the university's regional position.

An indication of SCU's serious commitment to community engagement is the provision of funds to undertake these activities. Some selected activities, which are indicative of the services offered by the university, include:

- regular donation of works of art and musical performance free of charge in support of worthy causes;
- advice and assistance to local Indigenous groups and individuals;
- library assistance to school and TAFE librarians and teachers on request;
- provision of a public access terminal to the internet and;
- availability of the university's buildings and equipment for use by the local community free of charge or for a nominal fee.

Clearly these types of activities represent an important resource for the local community. Many of these services are provided free or at greatly reduced rates. In many cases it is not possible to put a dollar value on the community service provided by the university but, clearly, if an SCU presence was not located on the Tweed–Gold Coast, the local community would not have access to many of the services available to them now or, if they did, they would have to pay higher fees for them.

| The Office of Regional Engagement

Many university projects that engage with the local community are guided by SCU's ORE which serves as a gateway to encourage the exchange of information, ideas and issues between the academy and the wider community. The ORE team works closely with regional communities — from individuals and community-based organisations, to business and government at all levels. The ORE is dedicated to further the cause of regional connectivity. It manages a systematic whole-of-university approach to positive community relations and regional engagement. There are also student focused programs dedicated to providing

students with opportunities to engage with the community through various voluntary activities.

8.2 SCU Engagement with the Local Community

Commitment to the community is exemplified by the extensive involvement by the university, both collectively by faculties and centres, and individually by its staff and students, in the provision of community service. The university engages with a number of local community groups across the region, some examples are listed in Appendix 1.

The university is continually collaborating with local government bodies on many levels, and with local business and industry. Examples are listed in Appendices 2 and 3. The university is also proud to be able to sponsor awards, offer event management services and support several local events. See Appendix 4 for listings.

As well as all of the formally recognised work of university staff engaging with the local community, there are many members of staff who perform voluntary work in various capacities during their own time. As found by Davis, Buultjens and Whelan (1996), staff voluntary contributions are invaluable to their local region and should not go unmentioned. SCU actively encourages its staff to participate in regional social and cultural boards and agencies and to become community volunteer workers. SCU staff members are involved with both on and off–campus community cultural and recreational activities. Staff also encourage and aid student voluntary efforts in the community through active participation in cultural life and internships with community organisations.

8.3 The Future

There are several more projects that the university is currently exploring and is keen to engage in with the local community. The university is constantly improving and expanding its community engagement projects.

SCU takes a prime role in the intellectual, economic, environmental, social and cultural development of our region. Strategies to constantly improve this role include:

- reviewing the Regional Plan with emphasis on two–way interactions;
- continuing the progress of the ORE;
- rewarding regional engagement by university staff;
- bringing business people and members of university communities on to SCU campuses regularly;
- being actively involved in key regional boards;
- collaborating with groups to enhance regional growth; and
- establishing a program for annual recruitment of trainees from our region; and
- the establishment of the Regional Futures Institute.

SCU actively engages with business, regional agencies, communities, individuals and government at all levels towards achieving this goal.

9. KEY REFERENCES

Davis, D., Buultjens, J. & Whelan, M. (1996), *The Economic Impact of Southern Cross University on the City of Lismore*. Southern Cross University, Lismore.

Milbourne, R., Bewley, R., Cumberworth, M., Spyrakis, V. and Baxter, P. (1993), *Profitable Neighbours: the economic impact of the University of New South Wales on the Randwick Municipality*. University of New South Wales, Kensington.

Southern Cross University (2009), Costs Brochure 2009. Southern Cross University, Lismore.

10. APPENDICES

Engagement with the Local Community

- The Aged Services Learning and Research Centre (ASLaRC) is a joint initiative of SCU's Faculty of Arts and Sciences and the University of NSW's Faculty of Medicine, Rural Clinical School, with links to North Coast TAFE and Coffs Harbour Senior College. The ASLaRC delivers services for regional and rural communities through teaching, research and promotion of evidence—based practice. An example of such research is 'Bridging the Gap: Scoping study on the health care needs of older Aboriginal people', a collaboration between ORE, ASLaRC and representatives of various organisations and agencies, and commissioned by the Federal Department of Health and Ageing;
- The Indigenous Network international Indigenous exchange and networking;
- Community Drug Action Team for the Tweed to address youth, drug and alcohol related issues, SCU involvement through the SASS;
- Homeless Forum SCU representative/Network member for the Working Group for Tweed;
- Homeless Connect SASS involvement through faculty and student volunteers;
- Community Reference Group through SASS, Social Welfare Industry;
- Surfrider Foundation (SF) SF is a not-for-profit organisation dedicated to the protection and enjoyment of Australia's oceans, waves and beaches through conservation, advocacy, research and education. SCU is involved with this organisation in several ways including through student internships and by hosting and supporting SF events;
- The Kokoda Challenge and Youth Program SCU is an education partner;
- Northern Rivers Connect –SCU involvement with this not-for-profit organisation that assists young people by working with schools, industry and professional career development practitioners;
- Tweed Community Early Childhood Alliance Guidance from the ORE with the formation of this alliance and workshop facilitation;

North Coast Academy of Sport (NCAS) – is a community-based organisation and works closely with the NSW Department of Sport and Recreation and SCU which has been a foundation member since NCAS was formed in 1989.

Local Government Collaboration

- Consultancies, governance and leadership training;
- Tweed Tourism and Northern Rivers councils internal research projects aimed at improving governance relationships regarding planning and management of events;
- Economic Development Review process for identifying registration for tender
 process with Tweed Shire Council and identifying suitable external consultants;
- Master Class Workshop (held in February 2009) designed for both research and local government extension/industry development;
- Tweed Shire Council Conduct Review Community;
- Memorandums of Understanding (MoUs) with Gold Coast City Council and Tweed
 Shire Council seeking to provide opportunities to establish collaborative
 partnerships that provide mutual benefit to organisations and the wider community;
- Scenic Rim Regional Council (SRRC) Arts and Tourism Project the SRRC has engaged with SCU to collaborate in a number of areas that will not only include Arts and Tourism, but also lead the way towards the signing of a MoU between the two organisations in the near future.

Engagement with Local Industry

- Regional sports business networks with SCU's Graduate College of Management to discuss opportunities for the region;
- NORCO review and general managers workshop facilitation, consultation, regional initiatives and resource sharing;
- Tweed Regional Gallery exhibitions (Stories of our Making), unpaid internships and research;
- Tweed Hospital Maternity Ward best practice and research development in midwifery;
- Tweed Daily News SCU business column providing expert commentary on business and economic issues;
- Local industries in the form of student internships;
- CPA Australia, Tweed Region SCU representative/discussion group member;
- Gold Coast and Tweed tourism industries through SCU's Australian Regional
 Tourism Research Centre and the School of Tourism Hospitality and Management;
- MoU with Gold Coast Institute of TAFE seeking to provide opportunities to establish collaborative partnerships that provide mutual benefit to the organisation and the wider community;
- Enviroindustry (formally GREIA) supported by SCU. Enviroindustry is the representative body for environment industries on the Gold Coast that supply environmental products, technologies and services, with the aim of connecting the industry with the broader business community both locally and overseas;
- Urban Development Institute of Australia: Gold Coast branch;
- Eco Village Currumbin SCU connection through Connecting Southern Gold Coast;
- Study Gold Coast an initiative of The Gold Coast Education and Training Network (GCETN). The GCETN liaises closely with government on all levels to fulfil its mission to support, promote and grow the region's industry in a global environment;
- Central Gold Coast Chamber of Commerce SCU's GCM;

- The Queensland International Business Academy (QIBA) at the Tweed-Gold Coast Campus English language and preparation courses for SCU degree programs are delivered by the QIBA;
- Connecting Southern Gold Coast SCU board members.

Local Events and Sponsorship

- The Gold Coast Marathon (10km sponsor);
- Lindesfarne Anglican Grammar College awards sponsorship;
- Repco Rally event management;
- Tweed Regional Art Gallery Exhibitions;
- Tweed Business Excellence Awards the Young Achiever Award (and judging);
- Kokoda Challenge Education Partner;
- Rainbow Bay, Tweed Heads & Coolangatta, Coolangatta, Kirra and North Kirra Surf Lifesaving Clubs.