

The Economic and Social Impact on Regional South Australia of Budgetary Cuts to TAFE SA

Prepared for

The Public Service Association

by

The Australian Institute for Social Research



February 2007

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Executive Summary

Aim

The aim of this report is to assess the likely economic and social impacts that may flow from TAFE SA having to cut its budget by \$5 million. It should be noted that no firm plans about how these savings will be realised have been proposed by the Department. The loss of 68 jobs is regarded by the PSA as a likely option that is being considered by the Department to realise these cuts, through a combination of the closure of seven small regional campuses and learning centres and job losses at a number of large regional campuses. The direct and indirect effects of these losses have been identified through consultations and estimated using input-output analysis.

Main findings

In the absence of a detailed cost saving proposal three scenarios were developed and modelled using input-output analysis. The intermediate scenario shows that a reduction in spending on salaries of \$5 million by TAFE SA, plus the associated reduction in indirect costs, would lead to a reduction in gross state product of \$20 million and the loss of 248 jobs across the State. However, as noted in the body of the report, the aggregate effects on the South Australian labour market and economy cannot be accurately assessed in the absence of a clear understanding of the relationship between TAFE SAs direct and indirect costs, especially with respect to small regional campuses and learning centres.

1. Introduction

In November 2006 the Chief Executive of the Department of Further Education, Employment, Science and Technology announced that a challenging budget situation for the Department had become evident. In a note to all staff dated 20 November 2006 the Chief Executive advised that “the Department has a challenging budget situation which will require a reduction in staffing levels”. Further advice provided to the Public Service Association indicates that the Department needs to find \$5 million in savings and that these cuts would of necessity be made to the budget of TAFE SA as its operations account for such a large proportion of the Departmental budget. The aim of this report is to assess the likely economic impact of cuts of this magnitude on regional South Australia and then assess the broader social impacts of the associated job losses.

No definite plans have been put forward by the Chief Executive about how the proposed budget savings would be realised. Hence, at this stage no information is available about the number of jobs that will be lost, the type of jobs to be lost and their geographical location. It can however be expected that the Department would seek to realise savings through attrition, that is by not filling all vacancies that arise from people leaving or retiring. The Chief Executive Officer also proposed that other measures to reduce costs might include;

- shared service efficiencies in the area of accounting and IT help desk;
- efficiencies in the use of administrative staff; and
- consolidation of TAFE SA activities to provide the same level of activity more efficiently.

Again, there is no specific detail available about how cost savings and efficiencies might be made through these means. For the purpose of this report it will be assumed

that the consolidation of TAFE SA activities is the most likely strategy for realising cost savings.

The Public Service Association is of the view that a reduction in spending of \$5 million would involve the loss of 68 jobs. The Association believes that the consolidation of TAFE SA operations is the most likely response by TAFE SA. In this context it is useful to examine what the likely impact of the job losses might be.

For the purpose of this impact analysis it is assumed that the consolidation of TAFE SA activities would involve two key strategies. First, closing a number of small regional campuses and learning centres that are located in close proximity to large regional TAFE SA campuses. Presumably this would lead to the closure of small campuses and learning centres in Clare, Cleve, Jamestown, Kimba, Lucindale, Wudinna and Yorketown. If these closures were to proceed, then it would result in the loss of just over 18 full-time equivalent jobs. Second, 12 or 13 jobs would be lost at each of four large regional TAFE SA campuses, such as those located in the Riverland and at Port Pirie, Whyalla and Mt Gambier. Moreover, it is presumed that these job losses will be restricted to administrative positions. That is, it is not expected that any lecturers will lose their jobs as this would directly impact on the ability of TAFE SA to deliver the education and training programs that it is committed to provide.

Again, it needs to be stressed that the proposal to cut \$5 million from the budget of TAFE SA has not been accompanied by a detailed proposal of which jobs are to be cut and the campuses that may be affected. The Department and the Public Service Association are currently undergoing a consultation process in relation to the cost saving target. This report is designed to help inform these discussions. The scenarios examined in Section 3 provide an insight into what might be the costs and

consequences of a \$5 million cut to TAFE SA and are provided for indicative and illustrative purposes only.

2. The current context

The seven small regional campuses that were referred to in the previous section take three forms. The smallest regional campuses are essentially shopfront operations, located in the main street of town and are staffed by one, or occasionally two, Community Liaison Officers. These shopfront operations provide the following services;

1. they provide information to their local community about TAFE SA operations and services;
2. they provide information to their local community about the operations of other higher education providers;
3. they provide support to external TAFE SA students, such as administration, access to computers and internet services, photocopying, access to facsimile machines, video conferencing and examination invigilation;
4. they act as the offices for group training schemes and so play an important role in apprentice training in regional South Australia;
5. their facilities are used to provide off-the job training by TAFE SA lecturers and other education and training providers; and
6. they act as a community focus, especially in those towns that do not have a public library, so they provide computer and internet access well as meeting rooms and community information to the broader community;

The second type of small regional TAFE SA campus are essentially stand alone buildings that employ two or more Community Liaison Officers and Program Support Officers as well as a number of lecturers. These campuses provide a wider range of services than those provided by shopfront operations. In addition to the above, these campuses also provide;

1. library services to TAFE SA students and the broader community;
2. education and training services provided by *in situ* lecturers and visiting lecturers; and
3. they provide and base from which TAFE lecturers serve other campuses.

The third type of regional TAFE SA campus are integrated with the activities of the local secondary school, in either a purpose built stand alone building or in premises that are shared with the school. They employ two or more Community Liaison Officers and Program Support Officers as well as a number of lecturers. In addition to the

above services, these campuses are especially important because they are the sole providers of trades and technical training to local high school students. Thereby, offering educational services that meet the needs of certain students.

From the above discussion, it can be seen that these small regional campuses play three important roles in the South Australian education and training system. First, they directly deliver a wide variety of adult community education courses and certificate courses throughout regional South Australia. Moreover, the employees of these campuses work very closely with the local community. This means that the courses that they develop and deliver meet the needs of the local community. Hence, they are highly valued by the communities that they serve. Second, as a result of the provision of both information about higher education and the provision of support services to higher education students they provide a very important link between the local community and the South Australian higher education sector. These linkages provide a pivotal role in recruiting and sustaining a large, but unspecified, number of external higher education students who live in regional South Australia. Finally, these small regional campuses are increasingly playing an important role in addressing the State's skills shortage as well as facilitating economic restructuring in agriculture, aquaculture, mining and tourism.

The operation of the TAFE SA campuses at the Eyre Peninsula towns of Cleve and Wudinna clearly illustrate the importance of small campuses in addressing the current skills shortages facing rural and regional South Australia generally, as well as facilitating the economic restructuring of the Eyre Peninsula, especially in agriculture, aquaculture, mining and tourism. Cleve is a small, but strong and progressive, rural community near the eastern coast of the Eyre Peninsula, about 200 kilometres southwest of Port Augusta and about 500 kilometres by road from Adelaide. The

population of Cleve township is approximately 800, while the total district council population is about 1900 people. On the other hand, Wudinna is a small town on the northern fringe of Eyre Peninsula. It is the central entrance to the Gawler Ranges National Park. The township is located about 250 kilometres west of Port Augusta and about 580 kilometres by road from Adelaide. It has a population of about 600 people, while the district council has a population of approximately 1500 people. The economies of Cleve and Wudinna are based on grain production, mostly wheat and barley, and to a lesser extent sheep and beef cattle. However, in recent years tourism, mining and aquaculture have become increasingly important to the economic base of these two towns.

Changes in the agricultural sector and the growth of mining, driven largely by the continued drought, the expansion of the Olympic Dam mine and the continued exploration and exploitation of the Gawler Craton, is driving an increased demand for education and training on the Eyre Peninsula in general and at Cleve and Wudinna in particular. There are two processes operating that are driving the structural adjustment of grain farming on the Eyre Peninsula. In order to remain economically viable, to manage better the present drought conditions and the need to derive the benefits of economies of scale that are associated with the increased capital intensity of broad acre farming, farms on the Eyre Peninsula are getting larger as a result of farm consolidation. Consequently, grain farms are increasingly being run as commercial enterprises, rather than along the lines of traditional family farms. This is driving the increased demand for TAFE courses in two ways. First, increased farm size and increased on-farm mechanisation is reducing the demand for agricultural labour. Hence, there is an out migration of economically active aged people. These people need to acquire the skills that they will need to find employment in industries other than agriculture. Second, the increased commercial focus of grain production is

changing employment practices on the Eyre Peninsula. As a result, the recruitment and selection of agricultural workers is becoming more formalised. Rather than relying on primary networks to employ agricultural workers, where employers are intimately acquainted with job applicants through close friends or family, farmers are increasingly using more formal practices of selection and recruitment. This means that agricultural workers need both training and certification in a wide range of technical skills related to agricultural production if they are to gain employment because potential employers are no longer aware of the skills possessed by applicants and the contexts in which their skills were acquired. These skills are provided for example by the Certificate Level II in Agriculture and by Certificate Level III On-Farm Traineeships. More general skills that are required in agricultural production, such as driver education, fork lift training, training in heavy machinery operation and explosives handling, as well apprenticeships in motor mechanics and diesel fitting, are also offered by TAFE. On the other hand, many people already possess these skills, but they look to TAFE for certification rather than training, because their skills have been acquired in informal contexts.

The second issue that is related to the increased commercialisation of farming on the Eyre Peninsula is the increased demand for business skills, which are met through the Certificate Level II in Business Studies.

The second process that is driving the demand for TAFE SA services is the growth of the State's mining industry. As discussed above, the Eyre Peninsula is also being affected by the mining boom in northern South Australia and in the Gawler Craton, which is located on the eastern Eyre Peninsula. There is some out migration of agricultural workers to places such as Roxby Downs, while there are increasing numbers of married men working two weeks on and one week off at Olympic Dam so

that their families can remain in the Cleve or Wudinna areas and enjoy the perceived benefits of a rural lifestyle. Mining and agriculture share many common skills, such as heavy machine operation, truck driving, fork lift operation and explosives handling. So, while many of the people from Cleve and Wudinna who are taking up the job opportunities in mining have the necessary skills they have been acquired in informal, on-farm, contexts. Many of these people need to undertake training not to acquire skills, but for certification purposes. Certification is necessary to gain access to most employment opportunities in mining, aquaculture and tourism.

This short case study demonstrates the importance of TAFE SA education and training as the northern Eyre Peninsula struggles to address the workforce challenges that are associated with the restructuring of traditional family farming, the general skills shortages that are confronting the South Australian labour market and the specific skills mismatches that have emerged due to the growth of the industries in the region.

3. Economic impacts

3.1 Introduction

This section presents a number of scenarios to illustrate what the direct and indirect impacts of a \$5 million cut to TAFE SA funding might be. It is assumed for illustrative purposes that the savings target will be achieved by reducing employment in regional TAFE campuses by 68 jobs. This is regarded by the Public Service Association as a likely option being considered by the Department. We reiterate that no detailed cost saving plan has been proposed by the Department and that the modelling which follows is provided to inform a better understanding of what the likely impact of job cuts to particular parts of TAFE SA might be. This section outlines three scenarios using input-output analysis to assess the economic and employment effects of a \$5 million cut.

3.2 Economic impact

The estimates of economic impact presented in this report are derived from the Regional Industry Structure and Employment model developed by EconSearch. The method employed for estimation of economic impacts is input-output analysis. Broadly, there are two ways in which the input-output method can be used. First, the input-output model provides a numerical picture of the size and shape of an economy and its essential features. The input-output transactions table can be used to describe some of the important features of an economy, the interrelationships between sectors and the relative importance of the individual sectors. Second, input-output analysis provides a standard approach for the estimation of the economic impact of a particular activity. The input-output model is used to calculate industry multipliers that can then

be applied to various growth or decline scenarios. For a technical description of the input-output modelling procedure refer to Appendix 1 and for a glossary of input-output terminology refer to Appendix 2.

Economic impacts in this report have been specified in terms of the following indicators;

- employment; and
- contribution to gross regional product.

It was assumed that the reduction in funding to the TAFE sector in each region will not be offset by an increase in expenditure in the provision of other government services. If this is a valid assumption, then the gross impact reported here will also be the net impact on each of the regional economies.

Employment is a measure of the number of working proprietors, managers, directors and other employees, in terms of the number of full-time equivalent (full-time equivalent) jobs.

Contribution to gross regional product is a measure of the net contribution of an activity to the regional economy. Contribution to gross regional product is measured as value of output less the cost of goods and services (including imports) used in producing the output. It can also be measured as household income plus other value added (gross operating surplus and all taxes, less subsidies). It represents payments to the primary inputs of production (labour, capital and land). Using contribution to gross regional product as a measure of economic impact avoids the problem of double counting that may arise from using value of output for this purpose.

Estimates of the economic impact are presented in terms of;

- direct impacts;
- flow-on (or indirect) impacts; and
- total impacts.

Direct impacts are the initial round of employment and gross regional product generated by an economic activity.

Flow-on (or indirect) impacts are the sum of production-induced effects and consumption-induced effects. Production-induced effects are additional employment and gross regional product resulting from re-spending by firms that receive payments from the sale of services to firms or organisation, for example, education services. Consumption-induced effects are additional employment and gross regional product resulting from re-spending by

households that receive income from employment in direct and indirect activities.

Input-Output Tables

Expenditure cuts are expected in six regions and input-output models were available for each of these regions, as defined in Table 2.1. The RISE models were prepared for 2002/03 and have been adjusted (using the consumer price index) to account for inflationary impact on employment-to-output ratios. Accordingly, the results presented below are in 2006 dollars.

The scenarios

This section outlines three scenarios using input-output analysis to assess the economic and employment effects of a possible \$5 million budget cut involving the loss of 68 jobs from regional TAFE SA campuses. The input-output method employed here estimates the multiplier effects associated with an increase or decrease in spending in the economy. It is based on an accurate estimate of the initial change in spending. The baseline scenario, which is presented first (Table 3.3), assumes that the initial reduction in spending is confined solely to the proposed \$5 million spending cut.

This is an unrealistic assumption however as salary costs are not the only costs that an organisation reduces when they downsize, especially if they close production sites or sites from which services are delivered. Information provided to the consultants indicates that TAFE SA estimates that wages and salaries comprise 80 per cent of its total expenditure. However, as discussed a one likely cost cutting strategy to be pursued by TAFE SA involves the closure of seven small campuses and learning centres. Under these circumstances there is likely to be scope for cost savings other than the direct labour. Consultations with a number of private sector higher education registered training organisations in Adelaide suggest that the figure of 80 per cent of all expenditure accounted for by wages and salaries is an over estimation as it ignores the indirect, or opportunity, costs of running a higher education campus. These private

sector registered training organisations suggest that 40 per cent is a more realistic estimate of the proportion of total costs accounted for by wages and salaries. Consequently, the second scenario, the intermediate case, is based on the assumption that the 18 full-time equivalent jobs that would be lost by closing seven small campuses and learning centres will save about \$70,000 each in direct costs and a further \$105,000 in indirect or opportunity costs. Hence, the total initial change in spending might be around \$6.91 million.

Scenario three is the worst-case, or high, scenario. The high scenario is based on the assumption that wages and salaries account for only 40 per cent of total expenditures across all of the activities of TAFE SA. Consequently, the total initial reduction in spending is \$12.5 million, \$5 million in direct savings plus \$7.5 million in indirect savings. Another way of looking at this scenario is that in order for the Department to save \$5m it need only cut sufficient jobs to save \$2 million, which would equate to some 28 jobs. It may therefore be feasible that this number of jobs could be lost from TAFE SA by natural attrition, without the need for a more aggressive approach to downsizing. Event though this scenario is the least realistic of the three scenarios considered here, its consideration underscores an important point. The relationship between the direct costs associated with downsizing and the total cost savings to TAFE SA need to be properly investigated before any firm proposals are developed and implemented by the Department.

As noted above, analyses have been undertaken for three alternative funding scenarios:

- a \$5 million reduction in funding across South Australia's regional TAFE campuses, the baseline scenario;
- a \$6.9 million reduction, the intermediate scenario; and
- a \$12.5 million reduction, the high scenario.

For the purpose of these analyses it was assumed that the regional distribution of the funding and employment reduction scenarios were as detailed in Table 3.2. For scenario one all funding lost relates to wages and on-costs (see Appendix Table 3.1). For scenarios two and three, the reduced regional expenditure over and above wages and on-costs will be on purchases of locally provided goods and services (see Appendix Table 3.2 and 3.3). It was assumed that the sectoral profile of this expenditure would be consistent with the input coefficients of the education sector specified in each of the region input-output models.

Table 3.1 Definition of regions facing TAFE funding cuts ^a

Region	Component LGAs ^b	Component SLAs ^c
Whyalla	Corporation of the City of Whyalla	Whyalla (C) Unincorp. Whyalla
Mid North	Clare & Gilbert Valleys Council Regional Council of Goyder Northern Areas Council	Clare and Gilbert Valleys (DC) Goyder (DC) Northern Areas (DC)
Yorke	DC of Barunga West Wakefield Regional Council Mallala DC DC of Yorke Peninsula	Barunga West (DC) Wakefield (DC) Mallala (DC) Yorke Peninsula (DC) North Yorke Peninsula (DC) South Unincorp. Yorke Copper Coast (DC)
Limestone Coast (South East)	City of Mt Gambier Naracoorte Lucindale Council Wattle Range Council Tatiara DC DC of Grant DC of Robe Kingston DC ^d	Mount Gambier (C) Naracoorte and Lucindale (DC) Wattle Range (DC) East Wattle Range (DC) West Tatiara (DC) Grant (DC) Robe (DC) Lacepede (DC) ^d
Eyre	DC of Ceduna City of Pt Lincoln DC of Cleve DC of Elliston DC of Franklin Harbour DC of Kimba DC of Le Hunte DC of Lower Eyre Peninsula DC of Streaky Bay DC of Tumby Bay	Ceduna (DC) Port Lincoln (C) Cleve (DC) Elliston (DC) Franklin Harbor (DC) Kimba (DC) Le Hunte (DC) Lower Eyre Peninsula (DC) Streaky Bay (DC) Tumby Bay (DC) Unincorp. West Coast Unincorp. Lincoln
Riverland	Berri Barmera Council DC of Loxton Waikerie DC of Renmark Paringa	Berri & Barmera (DC) Barmera Berri & Barmera (DC) Berri Loxton Waikerie (DC) East Loxton Waikerie (DC) West Renmark Paringa (DC) Paringa Renmark Paringa (DC) Renmark Unincorp. Riverland

^a LGA = Local Government Area; SLA = Statistical Local Area; DC = District Council, C = City.

^b Component LGAs based on information from www.ora.sa.gov.au/boards.shtml.

^c SLAs in red are not included in the Office of Regional Affairs (ORA) definitions of Regional Development Board regions but are included in the relevant RISE model.

^d Note difference in name.

Further details of the distribution for each of the funding reduction scenarios are included in Appendix 3.

Table 3.2 Distribution of reduction in funding and direct employment

	Eyre	Mid North	Riverland	South East	Whyalla	Yorke	Total SA
% of Funding Reduction	23%	18%	19%	19%	19%	2%	100%
Reduction in Funding:							
Scenario 1 (\$m)	1.14	0.89	0.95	0.97	0.95	0.11	5.00
Scenario 2 (\$m)	1.57	1.23	1.31	1.33	1.31	0.15	6.90
Scenario 3 (\$m)	2.84	2.23	2.38	2.41	2.38	0.28	12.50
Reduction in Employment (fte jobs)	15	12	13	13	13	1	68

Results of the Impact Analysis

Estimates of the net economic impact on the regional economies of a reduction in TAFE funding are provided in Tables 3.3 to 3.5. The estimated impacts represent a change from current funding levels. As noted earlier, it was assumed that there would be no offsetting increase in funding of other regional services and so the reported impacts are net impacts on the respective regional economies. For each of the scenarios the direct impact includes the loss of 68 full-time equivalent jobs and the wages, salaries and on-costs of those staff. The flow-on impact measures the economic effects in other sectors of the economy generated by the education sector activities, that is the multiplier effects.

For scenario one, the baseline scenario (Table 3.3), it was estimated that approximately 88 full-time equivalent jobs would be lost from the regional economies in response to a \$5 million reduction in funding, 68 directly and approximately 20 flow-on job losses in other sectors of the regional economies. Comparison of the individual regions indicates that the most significant job losses would be in the Eyre region. This reflects the significant reduction in expenditure in the Eyre region compared to the other regional economies.

Table 3.3 The net economic impact on SA regional economies of scenario 1, a \$5 million reduction in TAFE funding ^a

	Eyre	Mid North	Riverland	South East	Whyalla	Yorke	Total SA
Expenditure (\$m)	-1.14	-0.89	-0.95	-0.97	-0.95	-0.11	-5.00
Employment (fte) ^b							
<i>Total Direct</i>	-15	-12	-13	-13	-13	-1	-68
<i>Total Flow on</i>	-4	-4	-4	-4	-4	0	-20
Total ^c	-20	-16	-17	-17	-17	-2	-88
GRP (\$m)							
<i>Total Direct</i>	-1.14	-0.89	-0.95	-0.97	-0.95	-0.11	-5.00
<i>Total Flow on</i>	-0.33	-0.28	-0.31	-0.33	-0.36	-0.03	-1.64
Total ^c	-1.47	-1.17	-1.26	-1.30	-1.31	-0.14	-6.64

^a In 2006 dollars.

^b Full-time equivalent jobs.

^c Totals may not sum due to rounding.

Source: EconSearch analysis.

It was estimated that approximately \$6.6 million (in 2006 dollars) in gross regional product would be lost from the regional economies in response to a \$5 million reduction in funding. The majority of this would be in direct response to the funding reduction with the remaining \$1.6 million in flow on gross regional product in other sectors of the regional economies. As with the employment impacts, the loss in gross regional product would be greatest in the Eyre region.

The flow-on effects were estimated to be significantly greater in scenarios two and three, which involve reduced local purchases of goods and services, in addition to the reduction in labour related payments (that is, wages plus on-costs).

For scenario two, the intermediate scenario (Table 3.4), the flow-on employment is 40 full-time equivalent jobs giving a total employment impact of 108 full-time equivalent jobs lost. The impact of scenario three, the high scenario (Table 3.5), is even greater,

with 97 flow-on jobs and a total reduction in employment of 165 full-time equivalent jobs.

The pattern is similar in terms of gross regional product. The total scenario two impact, across all regions, is a fall in gross regional product of \$8.1 million. However, this input-output analysis underestimates the full economic impact of the intermediate scenario as it ignores the multiplier effect on the Adelaide metropolitan area. The Australian Bureau of Statistics (2001) estimates that the value of the multiplier is 2.9. So, an initial \$6.9 million reduction in spending by TAFE (scenario two) would lead to a total reduction in gross state product of \$20 million. For scenario three, the reduction in gross regional product was estimated to be even greater, totalling \$12.4 million across the six impacted regions, while the reduction in gross state product could be as much as \$36.25 million.

Table 3.4 The net economic impact on SA regional economies of scenario 2, a \$6.9 million reduction in TAFE funding ^a

	Eyre	Mid North	Riverland	South East	Whyalla	Yorke	Total SA
Expenditure (\$m)	-1.57	-1.23	-1.31	-1.33	-1.31	-0.15	-6.90
Employment (fte) ^b							
<i>Total Direct</i>	-15	-12	-13	-13	-13	-1	-68
<i>Total Flow on</i>	-9	-7	-8	-8	-7	-1	-40
Total ^c	-24	-19	-21	-21	-20	-2	-108
GRP (\$m)							
<i>Total Direct</i>	-1.14	-0.89	-0.95	-0.97	-0.95	-0.11	-5.00
<i>Total Flow on</i>	-0.67	-0.53	-0.59	-0.62	-0.63	-0.07	-3.11
Total ^c	-1.80	-1.42	-1.54	-1.59	-1.58	-0.18	-8.11

^a In 2006 dollars.

^b Full-time equivalent jobs.

^c Totals may not sum due to rounding.

Source: EconSearch analysis.

Table 3.4 The net economic impact on SA regional economies of scenario 3, a \$12.5 million reduction in TAFE funding ^a

	Eyre	Mid North	Riverland	South East	Whyalla	Yorke	Total SA
Expenditure (\$m)	-2.84	-2.23	-2.38	-2.41	-2.38	-0.28	-12.50
Employment (fte) ^b							
<i>Total Direct</i>	-15	-12	-13	-13	-13	-1	-68
<i>Total Flow on</i>	-22	-18	-20	-19	-17	-2	-97
Total ^c	-37	-30	-33	-32	-30	-4	-165
GRP (\$m)							
<i>Total Direct</i>	-1.14	-0.89	-0.95	-0.97	-0.95	-0.11	-5.00
<i>Total Flow on</i>	-1.65	-1.28	-1.43	-1.48	-1.44	-0.15	-7.43
Total ^c	-2.78	-2.17	-2.38	-2.44	-2.39	-0.26	-12.43

^a In 2006 dollars.

^b Full-time equivalent jobs.

^c Totals may not sum due to rounding.

Source: EconSearch analysis.

However, it needs to be noted that the aggregate effects of these job losses on the South Australian economy and labour market cannot be accurately assessed because TAFE SA does not have a clear understanding of the relationship between its direct and indirect costs.

3.3 Employment effects

The most obvious impact of these job losses is the direct and indirect effects on the regional labour market as shown in the three tables above. There is also a multiplier effect to be considered. The results shown in Table 3.4, the intermediate scenario, are the most realistic of the three scenarios that are considered here. This scenario shows that a further 40 jobs will be lost in regional South Australia as a result from the initial cut in 68 jobs that would result from the initial cost saving of \$5 million. However, this figure under estimates the total employment loss for two reasons. First, the jobs that

ewould be cut from TAFE SA are likely to be full-time positions, but many of the jobs that will be lost as a result of the multiplier effect will be part-time jobs. So, the number of part-time jobs lost needs to be estimated. Second, the additional job losses that are identified in Table 3.4 are restricted to regional South Australia and ignore any job losses that would occur in the metropolitan area and hence the State as a whole.

Part-time employment is the driver of jobs growth in South Australia. As a result, the average number of hours worked per person in South Australia, of those people who work 40 hours per week or less, is 29.1 hours per week. So, the loss of a full-time job, will lead to the loss of 1.4 jobs elsewhere in the economy. That is, the total job loses will be 124, the initial loss of 68 TAFE SA jobs plus another 56 jobs, both full-time and part-time that will be lost somewhere in regional South Australia.

On the other hand, the total number of jobs lost to the South Australian economy as a whole will be much higher. The multiplier effect for the Australian economy is 2.9 (Australian Bureau of Statistic, 2001). That is, an initial increase in spending in the economy of \$1 million will result in a total increase in gross domestic product of \$2.9 million. On the other hand, the creation of one new job in the economy will, as a result of the multiplier effect, lead to the creation of a further 1.9 new jobs. That is, total employment will rise by 2.9. The above discussion only considers changes to employment in regional South Australia. Hence, the multiplier will identify the total employment effects. Consequently, the initial 68 job losses will lead to the loss of another 129 full-time equivalent jobs in the economy. That is, the initial 68 job losses will lead to the loss to a total of 197 full-time jobs to the South Australian economy as a whole. Moreover, the 129 full-time equivalent jobs that will be lost through the multiplier effect will actually translate to an additional 180 jobs due to the high

proportion of part-time jobs in the South Australian economy. Hence, total job losses associated with the Department saving \$5 million will be 248 jobs.

4. Social impacts

4.1 Introduction

Consultations undertaken with the staff of the seven small campuses and learning centres that would be affected by the cuts modelled in this report and previous research undertaken by the Centre for Labour Research reveal two types of social effects are often associated with closures and the loss of public sector services, specific social effects and more general social impacts. These will be discussed in turn below.

4.2 Specific impacts

As discussed above, one of the main roles of the seven small campuses and learning centres is the link that they provide between their local community and TAFE. This link is manifest in two ways. First, they provide venues for on-site delivery of adult community education courses and certificate courses in numerous regional centres. Second, they provide support that sustains substantial numbers of TAFE SA students who are studying externally. However, as discussed above, because of the strong links that these campuses have with their local communities, support for external students is not restricted to TAFE SA students. Staff members of these campuses also provide support to local residents who are undertaking external university studies.

One of the major barriers to participation in higher education for people living in rural and regional Australia is the tyranny of distance. The isolation from staff, other students and learning resources associated with studying away from the campus at which students are enrolled is a major contributor to the poor success rates and high attrition rates of external students (Ramsay, Tranter, Sumner and Barrett, 1996). These

small campuses play an important role in reducing the isolation that is experienced by external students, but not just TAFE SA students. As discussed above, these campuses and learning centres are the venues for the delivery of TAFE adult and community education courses and certificate programs. If these campuses and learning centres were to close then students would be required to drive for an extra hour, an hour and a half and possibly even two hours, each way, to the nearest campus. Travel distances such as these, plus the direct costs of such travel and the opportunity costs associated with lost time to and from classes can act as a very strong barrier to engaging in education and training. This is especially problematic given that TAFE education has emerged as a key strategy by which many rural and regional communities are attempting to address the economic and workforce challenges that they face.

Consultations by the consultants with both TAFE SA staff and university staff underscore the importance of the support that is provided by TAFE SA staff to large numbers of university students who are studying externally. These students tend to be students of the University of South Australia and Open University Australia. This support is *ultra vires*. Hence, these activities are not recorded nor are they reported. So, the numbers of students being supported and the nature of this support is unknown. Nevertheless, the consultants are of the opinion that this support is highly valued by those university students that avail themselves of support. Rather, than ignoring these activities, the consultants are of the view that these informal arrangements could be formalised and once the pattern of usage is better understood then service agreements with the large providers of external university courses, such as the University of South Australia and Open University Australia, could be negotiated in order to recover some of the costs involved in supporting non-TAFE students.

Finally, it should be noted that TAFE SA has community service obligations to enable state-wide access to education and training. Consequently, TAFE SA operates across the State at 62 locations. Not all of these campuses and learning centres can meet the levels of productivity that their funding allocations require. Therefore, some campuses are necessarily being cross-subsidised by other campuses that are able to exploit the economies of scale and scope that exist in higher education. The closure of small campuses may mean that TAFE SA is unable to meet its community service obligations.

4.3 General social impacts

The 68 job losses that have been the focus of attention in the report must be considered in the context of the significant public sector job losses that began in 1991. Over the 10 years to 2001 the number of State public sector employees declined from 115,700 to 82,953 in June 2001. This represents a reduction of around 25 per cent or 32,800 employees over the decade. After a decade of decline, public sector employment rose by around seven per cent over the period 2002 to 2005, from 83,821 to 89,979. Consequently over the period 1991 to 2005, public sector employment has fallen from 18.7 per cent to 12.1 per cent of the South Australian workforce. The regional impacts of these job losses have not been systematically assessed.

In the context of development assessment, social impact assessment is used to predict the impacts on individuals, groups and communities arising from development projects. Social impact assessment can be an invaluable tool for enhancing the positive effects of developments and reducing the adverse social impacts that can threaten the viability and sustainability of a development proposal. Summerville *et al.* (2006; 2) argued that social impact assessment is an assessment tool that facilitates the

understanding of the distribution of the costs and benefits of particular resource developments, policies and plans at local and regional levels. This includes the identification of strategies to mitigate the adverse consequences of development plans and policies and increasingly to enhance the extent of the benefits enjoyed by both local and regional participants. The concept of social impact assessment was developed to meet the need to assess the impact of increased private sector spending or investment in a region. However, there is no reason to suggest that this concept should not be applied in reverse, that is to assess the social impacts associated with a reduction in public sector spending in a region.

A social impact can be defined as any change, resulting from development practices or other activities, which of course can include the closure of a mine, a factory or the withdrawal of public sector services, that affects the way of life of people, their culture or their community. These include the influence that change may have on the perceptions of individual and groups of cultural beliefs, identity and the cohesion of the community. That is, people do not necessarily need to be adversely affected by change, they just need to perceive that they have been adversely affected in order for them to be adversely affected. Social impacts are the consequences to communities of any private or public actions that alter the ways in which people live, work, play, relate to each other, organise to meet their needs and generally cope as members of a society. The term also includes cultural impacts involving changes to the norms, values and beliefs that guide and rationalise their cognition of themselves and their society. Social impacts, particularly adverse impacts, are often associated with four types of change;

1. *demographic change* including the size and composition of the resident population, the influx of any temporary workforce or new recreation users;
2. *economic change* including new patterns of employment, income generation and real estate speculation;

3. *environmental change* including alternations to land use, natural habitats and hydrological regime; and
4. *institutional change* including the structure of local government or traditional leadership, zoning by-laws or land tenure (Sadler and Fuller, 2002; 464).

In the view of Summerville *et al.* (2006;4). The seven steps in undertaking a social impact assessment are;

1. *scoping* to identify issues, affected interest groups and to define the boundaries of the study area;
2. *profiling* to describe existing social conditions and to establish “baseline” data against which impacts and effects can be identified and assessed;
3. *prediction* of the social impacts or social changes that may result from the project;
4. *assessment* of the significance of the predicted changes;
5. *evaluation* of alternatives;
6. identifying way of *managing, mitigating, monitoring and reviewing* potential negative impacts (or enhancing positive impacts); and
7. developing recommendations for various impact management measures and conditions of approval of the project.

Consequently, when proposals for budget cuts to TAFE SA are developed, they should be subject to a social impact assessment to reveal all the likely consequences of implementing such cuts

5. Conclusion

The aim of this report is to assess the likely economic and social impacts that may arise from TAFE SA having to cut its budget by \$5 million. However, no detailed plans as to how these savings are to be made have been proposed by the Department. Consequently, a number of probable scenarios were developed and modelled. The principal assumption underpinning the modelling was that the present budgetary challenge would be met by the loss of 68 jobs, through a combination of the closure of seven small regional campuses and learning centres and job losses at a number of large regional campuses. The intermediate scenario shows that a reduction in spending on salaries of \$5 million, plus the associated reduction in indirect costs, would lead to a reduction in gross state product of \$20 million and the loss of 248 jobs across the State. However, as noted above, the aggregate effects on the South Australian labour market and economy cannot be accurately assessed because TAFE SA does not have a clear understanding of the relationship between its direct and indirect costs, especially with respect to small regional campuses and learning centres.

The potential social impacts of the budget cuts were identified through consultations with TAFE SA staff working in regional South Australia. These consultations highlighted the very important link that small regional campuses and learning centres provide between the local community that they serve and the higher education sector. They provide important teaching and learning resources to students living in regional South Australia and reduce the isolation associated with studying externally. If these campuses and learning centres were to close, it is probable that a large proportion of students served by these sites would be unable to overcome the tyranny of distance and either not enrol in higher education studies or drop out.

The more general social impacts include concerns that loss of public sector jobs from regional South Australia in the wake of cuts implemented over the decade to 2001 are hollowing out the high wage, high skill employment base of some regional communities. Much greater attention needs to be paid to assessing the social impacts of the withdrawal of the public sector from regional South Australia,

6. References

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7. Appendixes

Appendix 1 Input-Output Methodology

Overview of Input-Output Analysis

Input-output analysis provides a comprehensive economic framework that is extremely useful in the resource planning process. Broadly, there are two ways in which the input-output method can be used.

First, the input-output model provides a numerical picture of the size and shape of an economy and its essential features. The input-output transactions model can be used to describe some of the important features of an economy, the interrelationships between sectors and the relative importance of the individual sectors.

Second, input-output analysis provides a standard approach for the estimation of the economic impact of a particular activity. The input-output model is used to calculate industry multipliers that can then be applied to various development scenarios.

Linkages between sectors

The standard approach for the estimation of the regional economic impact of a particular activity, such as pig production, is to employ *input-output analysis*. The input-output model conceives the economy of the region as being divided up into a number of sectors, and this allows the analyst to trace expenditure flows.

To illustrate this, consider the example of a piggery that, in the course of its operation, purchases goods and services from other sectors. These goods and services would include feed, power, and, of course, labour. The direct employment created is regarded in the model as an expenditure flow into the household sector, which is one of several non-industrial sectors recognised in the input-output model.

Upon receiving expenditure by the piggery, the other sectors in the regional economy engage in their own expenditures. For example, as a consequence of winning a contract for work with a piggery, a feedstuff producer buys materials from its suppliers and labour from its own employees. Suppliers and employees in turn engage in further expenditure, and so on. These *indirect effects*, as they are called, are part of the impact of the piggery on the regional economy. They must be added to the *direct effects* (which are expenditures made in immediate support of the piggery itself) in order to arrive at a measure of the total impact of the piggery.

It may be thought that these indirect effects go on indefinitely, and that their amount adds up without limit, the presence of *leakages*, however, prevents this from occurring. In the context of the impact on a *regional* economy, an important leakage is expenditure on imports, that is, products or services that originate from *outside the region, state or country* (e.g. machinery).

Thus some of the expenditure on imports to the region is lost to the local economy. Consequently, the indirect effects get smaller and smaller in successive expenditure rounds, due to this and other leakages. Hence the total expenditure created in the local economy is limited in amount, and so (in principle) it can be measured.

The performance of the input-output analysis calculations require a great deal of information. The analyst needs to know the magnitude of various expenditures and where they occur. Also needed is information on how the sectors receiving this expenditure share *their* expenditures among the various sectors from whom they buy, and so on, for the further expenditure rounds.

In applying the input-output model, the standard procedure is to determine the direct or first-round expenditures only. No attempt is made to pursue such inquiries on expenditure in subsequent rounds, not even (for example) to trace the effects in the local economy on household expenditures by piggery employees on food, clothing, entertainment, and so on, as it is impracticable to measure these effects for an individual case, here the piggery.

The input-output model is instead based on a set of assumptions about constant and uniform proportions of expenditure. If households in general in the local economy spend (say) 13.3 per cent of their income on food and non-alcoholic beverages, it is assumed that those working in piggeries do likewise. Indeed, the effects of all expenditure rounds after the first are calculated by using such standard proportions (*multiplier* calculations).

Multipliers

Multipliers are an indication of the strength of the linkages between a particular sector and the rest of the regional economy. As well, they can be used to estimate the impact of a change in that particular sector on the rest of the economy. As noted above, detailed explanations on calculating input-output multipliers (and the underlying assumptions) are provided in any regional economics or input-output analysis textbook (see for example Jensen and West (1986)). Suffice to note that they are calculated through a routine set of mathematical operations based on coefficients derived from the input-output transactions model.

Input-output transactions model

The structure and linkages of a local economy can be described with the aid of input-output analysis. Input-output analysis, as an accounting system of inter-industry transactions, is based on the notion that no industry exists in isolation.

This assumes, within any economy, each firm depends on the existence of other firms to purchase inputs from, or sell products to, for further processing. The firms also depend on final consumers of the product and labour inputs to production. An input-output transactions model is a convenient way to illustrate the purchases and sales of goods and services taking place in an economy at a given time.

Input-output models provide a numerical picture of the size and shape of the economy and its essential features. Products produced in the economy are aggregated into a number of groups of industries and the transactions between them recorded in the transactions model. The rows and columns of the input-output model can be interpreted in the following way:

- The rows of the input-output model illustrate sales for intermediate usage (to other firms) and for final demand (consumers, exports, capital formation).
- The columns show the origin of the inputs and hence the purchases made at that time (labour, capital and intermediate inputs).
- Each item is shown as a purchase by one sector and a sale by another, thus constructing two sides of a double accounting schedule.

In summary, the input-output transactions model can be used to describe some of the important features of a regional economy, the interrelationships between sectors, and the relative importance of the individual sectors. The model is also used for the calculation of sector multipliers and the estimation of economic impacts arising from some change in the local economy.

Appendix 2 Glossary of Input-Output Terminology

Basic value is the price received for a good or service by the producer. It is also known as *producers' price*. It excludes indirect taxes and transport, trade and other margins.

Consumption-induced effects are additional output, employment and income resulting from re-spending by households that receive income from employment in direct and indirect activities. Consumption-induced effects are sometimes referred to as “induced effects”.

Contribution to gross state/regional product is calculated as the value of output less the cost of goods and services (including imports) used in producing the output. It represents payments to the primary inputs of production (labour, capital and land). Contribution to GSP/GRP is consistent with standard measures of economic activity, such as gross domestic, State or regional product and it provides an assessment of the net contribution to regional economic growth of a particular enterprise or activity.

Direct effects are the initial round of output, employment and income generated by an economic activity.

Employment is the number of working proprietors, managers, directors and other employees, in terms of the number of full-time equivalent jobs.

Exports refers to the sale of goods and services to final consumers outside the region of interest. In a state input-output model, exports refers to the sale of goods and services interstate and overseas. In a regional input-output model exports refers to the sale of goods and services interstate, overseas and to other regions within the state.

Flow-on effects are the sum of the production-induced effects and the consumption-induced effects.

Household income is wages and salaries, drawings by owner operators and other payments to labour including overtime payments and income tax, but excluding payroll tax.

Input-output analysis is an accounting system of inter-industry transactions based on the notion that no industry exists in isolation.

Input-output model is a transactions model that illustrates and quantifies the purchases and sales of goods and services taking place in an economy at a given point in time. It provides a numerical picture of the size and shape of the economy and its essential features. Each item is shown as a purchase by one sector and a sale by another, thus constructing two sides of a double accounting schedule.

Multiplier is an index (ratio) indicating the overall change in the level of activity that results from an initial change in economic activity. They are an indication of the strength of the linkages between a particular sector and the rest of the regional economy. They can be used to estimate the impact of a change in that particular sector on the rest of the economy.

Other Final Demand includes government expenditure, private and public sector investment (gross fixed capital formation) and change in stocks (inventories).

Other Value Added includes gross operating surplus and all taxes, less subsidies.

Output is gross revenue of goods and services produced by commercial organisations plus gross expenditure by government agencies.

Purchasers' price is the price paid for a good or service paid by the purchaser. It includes indirect taxes and transport, trade and other margins.

Production-induced effects are additional output, employment and income resulting from re-spending by firms that receive income from the sale of goods and services to firms undertaking, for example, agricultural activities. Production-induced effects are sometimes referred to as "indirect effects".

Total impact is the sum of the direct effects and the flow-on effects.

Type I multiplier is calculated as $(\text{direct effects} + \text{production-induced effects}) / \text{direct effects}$.

Type II multiplier is calculated as $(\text{direct effects} + \text{production-induced effects} + \text{consumption-induced effects}) / \text{direct effects}$.

Appendix 3

Assumed Expenditure Profile of Reduced TAFE Funding – Scenarios 1 to 3

**Appendix Table 3.1 Assumed expenditure profile of reduced TAFE funding –
scenario 1 (\$)**

	Eyre	Mid North	Riverland	South East	Whyalla	Yorke	Total SA
Wages and On-Costs							
Wages	959,075	752,050	802,750	815,425	802,750	92,950	4,225,000
Superannuation	102,150	80,100	85,500	86,850	85,500	9,900	450,000
Payroll Tax	62,425	48,950	52,250	53,075	52,250	6,050	275,000
Workcover	11,350	8,900	9,500	9,650	9,500	1,100	50,000
<i>Total Wages and On-Costs</i>	<i>1,135,000</i>	<i>890,000</i>	<i>950,000</i>	<i>965,000</i>	<i>950,000</i>	<i>110,000</i>	<i>5,000,000</i>
Other Expenditure	0	0	0	0	0	0	0
<i>Total</i>	<i>1,135,000</i>	<i>890,000</i>	<i>950,000</i>	<i>965,000</i>	<i>950,000</i>	<i>110,000</i>	<i>5,000,000</i>

Source: Australian Taxation Office (www.ato.gov.au), Revenue SA (www.revenuesa.sa.gov.au) and the South Australian WorkCover Corporation (www.workcover.com).

**Appendix Table 3.2 Assumed expenditure profile of reduced TAFE funding –
scenario 2 (\$)**

	Eyre	Mid North	Riverland	South East	Whyalla	Yorke	Total SA
Wages and On-Costs							
Wages	959,075	752,050	802,750	815,425	802,750	92,950	4,225,000
Superannuation	102,150	80,100	85,500	86,850	85,500	9,900	450,000
Payroll Tax	62,425	48,950	52,250	53,075	52,250	6,050	275,000
Workcover	11,350	8,900	9,500	9,650	9,500	1,100	50,000
<i>Total Wages and On-Costs</i>	<i>1,135,000</i>	<i>890,000</i>	<i>950,000</i>	<i>965,000</i>	<i>950,000</i>	<i>110,000</i>	<i>5,000,000</i>
Other Expenditure	431,300	338,200	361,000	366,700	361,000	41,800	1,900,000
<i>Total</i>	<i>1,566,300</i>	<i>1,228,200</i>	<i>1,311,000</i>	<i>1,331,700</i>	<i>1,311,000</i>	<i>151,800</i>	<i>6,900,000</i>

Source: see Appendix Table 3.1.

**Appendix Table 3.3 Assumed expenditure profile of reduced TAFE funding –
scenario 3 (\$)**

	Eyre	Mid North	Riverland	South East	Whyalla	Yorke	Total SA
Wages and On-Costs							
Wages	959,075	752,050	802,750	815,425	802,750	92,950	4,225,000
Superannuation	102,150	80,100	85,500	86,850	85,500	9,900	450,000
Payroll Tax	62,425	48,950	52,250	53,075	52,250	6,050	275,000
Workcover	11,350	8,900	9,500	9,650	9,500	1,100	50,000
<i>Total Wages and On-Costs</i>	<i>1,135,000</i>	<i>890,000</i>	<i>950,000</i>	<i>965,000</i>	<i>950,000</i>	<i>110,000</i>	<i>5,000,000</i>
Other Expenditure	1,702,500	1,335,000	1,425,000	1,447,500	1,425,000	165,000	7,500,000
<i>Total</i>	<i>2,837,500</i>	<i>2,225,000</i>	<i>2,375,000</i>	<i>2,412,500</i>	<i>2,375,000</i>	<i>275,000</i>	<i>12,500,000</i>

Source: see Appendix Table 3.1.