



## STATISTICAL INDICATORS FOR LOCAL GOVERNMENT AREAS: A CASE STUDY OF THE SHOALHAVEN LGA, 1997<sup>1</sup>

**Nell Stetner-Houweling**

School of Mathematics and Applied Statistics, University of Wollongong, Northfields Avenue, Wollongong, NSW 2522, Australia.

**David Steel**

School of Mathematics and Applied Statistics, University of Wollongong, Northfields Avenue, Wollongong, NSW 2522, Australia.

**Greg Pullen**

Industrial Development Manager, Shoalhaven City Council, P.O. Box 42, Nowra, NSW 2541, Australia.

**ABSTRACT** Decision makers and planners need to have relevant and reliable information to give a picture of how different areas are developing economically and socially. However, there is a perceived lack of timely and easily accessible data at the Local Government Area (LGA) level. This study produced a statistical profile of the Shoalhaven (LGA) by developing a conceptual framework, which represents the key economic, social, and population characteristics of the LGA. The statistical data available from the Australian Bureau of Statistics (ABS) at the level of the LGA, was investigated and summarised. Other sources of information available to create a statistical profile of the Shoalhaven LGA were identified. The criteria used to select indicators were that the data were already available, relevant to the concept being measured and comparable over time and areas. The data had to be reliable and likely to be available in the future. In compiling the data from multiple sources it is important that the methods of collection and reliability of the data are investigated and documented and that concepts, definitions and classifications are comparable.

### 1. INTRODUCTION

At the 1996 Population census, 36.4% of the Australian population lived outside capital city Statistical Divisions (SDs), (ABS, 1998a, p.4). Non-metropolitan regions play an important role in Australia's economy and they make a substantial contribution to export activity, (Beer, 1994, xii). Regional planners require detailed information, (Jensen, 1979 p.i) to help in the promotion of economic activity and encouragement of development, (Brewis, 1969 p. 6).

Information on regional differences may be used in the allocation of resources. In Australia, a fiscal response to regional differences has been the equalisation of State Government administrative, social and economic services,

<sup>1</sup> This paper was made possible by a scholarship offered by the Shoalhaven City Council. The authors would also like to express their gratitude to the staff of the Shoalhaven City Council for their assistance and cooperation during the study. The comments of an anonymous referee were particularly helpful.

(Matthews, 1981, p.xv). Most comparisons of economic and social conditions in Australia have been made between capital cities, the six states or statistical divisions. However, when smaller regions are considered, the results are much more differentiated, (Zagorski, 1989, p. 151).

Historically, the states of Australia have grown up more or less at the same time and in the same way (Matthews, 1981, p.54). In comparison with other nations, Australia exhibits smaller regional differences. A study of ten OECD nations showed Australia, in 1989, as having the second lowest regional dispersion of average earnings per worker, (EPAC, 1991a, p.49). For a vast and regionalised country, Australia is remarkably homogeneous in economic and social characteristics, (Matthews, 1981, p.68).

Australia has a hierarchical geographical structure, with the smallest areal unit to the largest being; Census Collector's Districts (CDs), LGAs or Statistical Local Areas (SLAs), Statistical Divisions (SD) and States/Territories. In NSW, SLAs are in almost all cases identical with or have been formed by a division of a whole LGA, (ABS, 1994d). A region may be any unit smaller than a nation for example, an LGA or a SD, (EPAC, 1991a, p.15). Differences in regional economic prosperity have been noted between the metropolitan and non-metropolitan areas within the states, (Stilwell, 1992, p. 49). Though these differences are still small in comparison with sub-regions of a similar size in, for example, Canada, they are big enough to represent a problem and an opportunity for policy intervention, (Higgins, 1989, p. 6).

In general, non-metropolitan regions show a high dependence on one industry, type of agriculture or activity, (EPAC, 1991a, p.16). Policies that encourage regional cities to develop less specialised economies are likely to result in long term job growth and stability. Diversity can be increased through local employment initiatives, (Beer, 1994, p. xiii). Government policies can ensure that development makes appropriate use of the natural and economic environment.

In Australia, many statistics are not available for areas smaller than the states, (EPAC, 1991a, p. 7). Some data series are not available with the frequency and timeliness which might be desired, (EPAC, 1985, p.3). The Shoalhaven City Council (SCC) initiated a study of statistical indicators for the LGA. The main aims of the study were :

- to establish a database of economic and social indicators which could be used to monitor the economic performance and social conditions of the Shoalhaven LGA;
- to compare the economic performance and social conditions of the Shoalhaven LGA with two other coastal LGAs, Coffs Harbour and Greater Taree, and a NSW benchmark.

To achieve these aims it was necessary to:

- determine the availability and timeliness of statistical data available from the ABS at the level of the LGA;
- identify types and sources of statistical indicators available from sources including the Road Traffic Authority (RTA), Integral Energy, Department of Education and Australian Taxation Office (ATO);

- identify means for the SCC to collect and store economic and social data;
- identify means for the SCC to present such data to monitor the Shoalhaven's economic performance and social conditions;
- identify a mechanism for the SCC to compare the characteristics of the Shoalhaven with other regions.

The LGAs of Coffs Harbour and Greater Taree were chosen for comparison purposes as they are also located in coastal, non-metropolitan NSW and have a high dependency on tourism revenue, high population growth rates and high rates of unemployment.

## 2. CONCEPTUAL FRAMEWORK FOR STATISTICAL INDICATORS

This section considers a conceptual framework, which covers the main social and economic characteristics of a region. This framework represents what economic, social and demographic characteristics ideally should be measured. What data are available to measure these characteristics is considered in section 3.

There are two stages of indicator selection, which involve determining; the conceptual aspect or what exactly is to be measured and the availability and quality of relevant data, (McGranahan, 1985, p.6).

There are many suggested sets of indicators. Zagorski (1985) stressed the importance of choosing variables that represent important contextual characteristics of a region. He noted that if a set of indicators representing different conceptual fields is subjected to factor analysis, then the three dimensions of social structure, demographic characteristics and economic structure would usually emerge. Gornostayeva (1989) identified similar factors. Economic, demographic, ethnic and quality of life variables have been employed in previous multivariate analyses, (Davies, 1993, p.1166).

Regional disparities consist of the following, (EPAC, 1985, 1991a, 1991b):

- population - size, growth, density, age and gender structure;
- distribution of economic activity, including manufacturing, retail, tourism and agricultural activities;
- average income, including household disposable income, average weekly earnings, cost and type of housing and cost of living;
- employment, including unemployment rates, participation rates and employment opportunities and employment specialisation;
- availability and utilisation of public amenities including health care, transport, sewerage, water supply and education facilities;
- levels of health, education and skills, leisure time;
- physical environment including climatic factors such as rainfall and temperature, exposure to pollution, personal safety and crime incidence.

The ABS has identified the following areas where existing statistics are deficient, (ABS, 1997c, p.6):

- structure and composition of regional economy,
- regional economic activity indicators,
- measures of regional import and export activity,

- employment structure and skills availability,
- investment activity - capital expenditure and financing

The following list represents the framework we considered for a set of indicators that would adequately describe a region.

**A. Economic Structure**

**(i) Employment in various industry sectors**

employment by industry

**(ii) Working conditions**

number of hours worked including overtime

percentage of working persons involved in continuing education

incidence and pattern of overtime

**(iii) Business conditions**

turnover in various industries

wages and salaries paid per industry

industry revenue

import and exports per industry

building and construction activity

utility usage

capital expenditure by industry

**(iv) Economic activity**

vehicle registrations

telephone connections

**(v) Financial conditions**

patterns of banking and saving

number and value of mortgages

investment including foreign and domestic

number and type of bankruptcies

**B. Social Infrastructure**

**(i) Occupational structure**

number of people in skilled and unskilled occupations

**(ii) Type of employment**

employed wage and salary earners

self employed versus wage and salary earners

**(iii) Labour force**

number of people in labour force

labour force participation rate

**(iv) Employee status**

number of full-time and part-time workers

**(v) Unemployment indicators**

number of employed persons

number of unemployed persons

unemployment rate

- number of employment vacancies
- (vi) **Educational level**
  - highest educational level attained
- (vii) **Participation in education**
  - number of students enrolled in educational institutions
- (viii) **Housing condition and costs**
  - type of tenancy; owned, being purchased or rented
  - type of residence; house, flat, caravan
  - housing costs of mortgage or rent
- (ix) **Income, costs and expenditure**
  - cost of living
  - average income
  - household disposable income
  - household expenditure
  - distribution of wealth and income
- (x) **Social services**
  - utilisation and availability of health services
- (xi) **Availability of infrastructure**
  - utilisation and availability of transportation - road, rail and sea
  - number of Internet Service Providers (ISPs)
  - number of internet connections
  - number of banks or ATM machines
  - number of post offices
  - number of libraries
  - number of employment agencies
- C. Population Characteristics**
- (i) **Population**
  - total population
  - population growth rate
- (ii) **Demographic characteristics**
  - population by age and sex
- (iii) **Family and household structure**
  - family type; number of adults and children per household
  - marital status of individuals
- (iv) **Religious denomination and ethnicity**
  - number of people born overseas
  - number of people speaking a second language other than English
  - number of people per religious denomination

### **3. STATISTICAL INDICATORS AT LGA LEVEL**

#### **3.1 Selection Criteria**

An indicator should be representative of the appropriate conceptual field and

the data must be reliable, available and comparable between areas and time periods. Anderson (1991) proposed the following guidelines for the selection of indicators. The indicator should be:

- already available or available easily and cheaply;
- easy to understand;
- measurable;
- significant i.e. the indicators should be relevant to the concept being measured;
- timely;
- comparable for example between geographical areas;
- able to allow international comparison.

The data should also be available at the geographical level specified and reliable and available in the future, (Harbison, 1970, p.4).

McGranahan (1985) used a five point checklist for the initial selection of data. In addition to the availability criteria, he included conceptual validity, comparability of operational definitions and a balance between sectors and between economic and social indicators.

### **3.2 Sources of Information**

The ABS is the major collector, compiler and distributor of statistical information in Australia, (ABS, 1994a, p.2). Other organisations generate statistics as a by-product of their administrative activities. For example, the Australian Taxation Office (ATO) and Medicare collect a large amount of information about the Australian population in the course of processing tax returns and Medicare claims. While not every person submits a tax return, Medicare covers all Australian residents. Local government bodies collect information relating to the provision of services and building activity. An indicator of business activity is water usage measured from annual account readings. The number of subdivisions released may indicate potential building activity and development. Other public agencies that keep extensive records are the Road Traffic Authority (RTA) which collects information on the size of vehicle fleet and Department of Education, which collects information on school enrolments. Other organisations that are able to provide data include Integral Energy, which keeps records of electricity billing, and Telstra which can provide data on telephone connections.

### **3.3 The ABS as a Source of LGA Information**

#### **3.3.1 ABS Publications**

The ABS publishes a large amount of the information regarding social conditions and economic activity collected using sample surveys, censuses and data generated as an administrative by-product, (ABS, 1994a, p.2). The ABS mainly publishes information at a national, state or Statistical Division level. Sample survey estimates are usually produced for the states and two territories and Australia. However, the sample sizes in the LGAs are usually too small to allow for the production of reliable statistics from sample surveys. Typically,

data at the level of the LGA must be obtained from censuses or administrative records or be statistically modelled.

The ABS publishes monthly building activity information for LGAs. The Tourism accommodation survey is conducted quarterly. Changes to the scope of the survey were implemented from the March Quarter 1998, (ABS, 1998b, p.2). A Standard Data Service (SDS) has replaced the Former State and Territory Tourist Accommodation publications (Catalogue nos. 8635.1 to 8635.8) for each State/Territory (except the ACT). The SDS products may be purchased by users and contain data at LGA level and Statistical Local Area (SLA) level within Tourism Regions. Data are now classified by Tourism Regions as defined by the relevant State and Territory Tourist Commissions or equivalent organisations, (ABS, 1999, p.2).

Prior to the 1996-7 collection, a small scale census of manufacturing was conducted annually and there was a triennial full scale manufacturing census. The ABS now conducts a manufacturing census every five years and a sample survey in intervening years, (ABS, 1997e, p.5). The annual agricultural census was changed to an annual survey, the Agricultural Commodity Survey (ACS) for the 1997-98 collection and a census of Agriculture is planned every 5 years, starting in 2001-02, (ABS, 1998c, p.3). One implication of this change is the loss of small area data, (Sward, 1998, p.7) The 1991-92 Retail and Services Censuses were the last censuses of those industries. The next collections, for reference year 1998-99, will be conducted as sample surveys. A register of businesses containing employment size, location and industry type is maintained by the ABS. While this register is maintained primarily for use in conducting censuses and surveys of businesses it can be used as a source of statistics.

The Census of Population and Housing is conducted once every five years. Data for all geographical levels are available but there are problems of cost, long lead time and infrequent observations, (ABS, 1997b). There are no annual economic performance indicators produced at the level of LGA. Labour Force data are not produced for the LGA except for census years. Hence, alternative sources of annual data must be sought, usually in the form of by-products of administrative activities.

### **3.3.2 ABS Electronic Sources of Data**

The ABS website, <http://www.abs.gov.au>, contains a summary of information of the ABS products and services. Access to a large collection of time series covering the economy and society over the last 20 years is available through the PC AUSSTATS. The information is generally available for Australia, individual States/Territories and for some series, such as the consumer price index, at a capital city level. A one-year subscription starts at \$1000.

The ABS has produced electronic sources of information for regional clients. Their main products are CDATA and the Integrated Regional Database (IRDB). Information from these sources can easily be exported to other applications. Disadvantages include cost, data gaps and underutilisation due to a lack of computer skills of users.

CDATA contains summary information from the 1986, 1991 and 1996 censuses of population and housing, on CD-ROM. An extensive number of topics

may be accessed for collection district, census division, statistical division, statistical and legal local government area, Commonwealth and State Electoral division, statistical region and urban centres, (ABS, 1993b, p.57).

The IRDB is a CD-ROM package, which provides a wide range of social, economic and environmental data. These are available at the level of Australia down to the level of the SLA. Information dates back to 1986 and even earlier for some items. It contains information from the social and economic collections of the ABS and from other Commonwealth agencies, covering for example, the environment, health and disability, employment and unemployment, rural

Area = Shoalhaven			PERCENT
YEAR	NUMBER OF EMPLOYEES		Sum
1994	sz0_5	*****	63.63636 n = 3, 157
	sz5_9	*****	16.75641
	na	****	9.50269
	sz10_19	***	5.54324
	sz20_49	**	3.32594
	sz50_99		0.76022
	sz100_		0.47513
1995	sz0_5	*****	67.42335 n=3, 392
	sz5_9	*****	16.03774
	na	****	7.39976
	sz10_19	***	5.07075
	sz20_49	*	2.85967
	sz50_99		0.70755
	sz100_		0.50118
1996	sz0_5	*****	69.04762 n=3,738
	sz5_9	*****	15.56982
	na	***	6.42055
	sz10_19	***	5.08293
	sz20_49	*	2.72873
	sz50_99		0.72231
	sz100_	-----	0.42804
	10 20 30 40 50 60 70		PERCENT Sum

**Figure 1.** Size of Business as a Percentage of all Businesses in the Shoalhaven LGA 1994-96

Source: ABS Business Register Service



economies and electoral matters. The IRDB can produce tables, graphs and reports for a selection of areas, data items and time periods. Information can be readily imported and exported from the application, (ABS, 1996b, p.31).

The IRDB contains information on the Estimated Resident Population, and activity in the sectors of building and agriculture, manufacturing, retailing and tourism. There is a business profile by location, employment and industry from the ABS Business Register. Key socioeconomic data from the quinquennial population census are available.

Area = NSW			PERCENT
YEAR	NUMBER OF EMPLOYEES		Sum
1994	sz0_5	*****	58.73716 n=295,033
	sz5_9	*****	15.23558
	na	*****	13.04125
	sz10_19	***	6.89109
	sz20_49	**	3.76839
	sz50_99	*	1.34222
	sz100_		0.98430
1995	sz0_5	*****	62.40852 n=317,298
	sz5_9	*****	14.54941
	na	*****	10.91277
	sz10_19	***	6.48602
	sz20_49	**	3.46078
	sz50_99	*	1.25150
	sz100_		0.93099
1996	sz0_5	*****	64.98421 n=349,331
	sz5_9	*****	14.05057
	na	*****	9.47955
	sz10_19	***	6.14661
	sz20_49	**	3.31147
	sz50_99	*	1.17138
	sz100_		0.85621
			10 20 30 40 50 60

Figure 2. Size of Business as a Percentage of all Businesses in NSW 1994-96.

Source: ABS Business Register Service

ABS information is supplemented by information from other sources. Most, but not all, of these sources provide information at the LGA/SLA level. The Department of Employment, Workplace Relations and Small Business (DEWRSB) provides quarterly labour market estimates at the level of LGA/SLA. CentreLink, formerly the Department of Social Security (DSS), provides information on benefit recipients on an annual basis at the SLA level. The provision by Department of Human Services and Health (DHS) of various health and community services for the aged and children and those with a disability is documented annually at the SLA level. Information on Medicare services per capita and the number of general practitioners per 1000 population are provided annually for the SLA level. Also included is the number of persons enrolled on the electoral roll since 1994 for the SLA from the Australian Electoral Commission (AEC). The Environmental Resource Information Network (ERIN) provides information to the ABS regarding vegetation, land tenure and, climate and terrain, on an annual basis down to the level of SLA.

The Industry Commission supplies employment and industry output estimates down to the Statistical Division level only. The Australian Bureau of Agricultural and Resource Economics (ABARE) provides data on the average agricultural output per farm obtained from their Australian Agricultural and Grazing Industries Survey (AAGIS) for ABARE specified regions, (ABS, 1997b).

The issues that affect the IRDB are common to any compilation of data from multiple sources. They include data availability, continuity, reliability, geographical comparability and comparability over time. Continuity is compromised because data definitions and classifications vary by collection and data source. Many of these features change from one observation of the collection to the next, for each of the three dimensions (Data-Area-Time) of the database. Geographical comparability is facilitated as the IRDB has a concordance facility that allows retrieval of data for Australian Standard Geographic Classification (ASGC) and some non-ASGC areas. A prerequisite for compiling meaningful time series of small area and regional data is boundary stability. The greatest problem in constructing even a short time series of small area data are that LGA and SLA boundaries are modified because of administrative changes. As a result of data quality issues and problems associated with the changes in geographic boundaries, little data for periods before the mid 1980s have been stored on the IRDB. Annual collections from those periods have been archived elsewhere. Comparability over time has been affected by the fact that many data collections have undergone major changes in data content, data processing and editing practices and type of data released. Some data are available only at irregular intervals. Collections are often ongoing registers rather than 'point in time' collections, for example, the IRIS business register from which the IRDB Business Profile is drawn, the AEC roll count, and some DHS series, (ABS, 1997b).

A disadvantage of these ABS sources in the perception of regional users is the significant initial purchase cost. The cost for the CDATA96 package was approximately \$8,000 for the first time buyer, (ABS, 1996g). The total package of IRDB97 for NSW cost \$3,250. The IRDB is only updated annually and at a cost that may be prohibitive to small, local organisations. An annual update of

NSW state information was priced at \$1,950, in 1997.

Due to limitations of the amount of data that can be stored on the IRDB database, there is a compromise between level of detail and length of time series which are included. Most collections with a high degree of detail do not have a lengthy time series. The need to protect confidentiality also limits the output data, (ABS, 1997b).

Once purchased, these products may be under-utilised because staff do not use the databases regularly enough to become comfortable and efficient users. In some organisations, staff do not receive in-house training in how to use these systems and do not have the background skills to teach themselves. For both CDATA and the IRDB the skill level required for the extraction of data is restricted to many regional development practitioners. The IRDB is made up of data items which need to be specified individually, (ABS, 1997c, p.7). The ABS provides training sessions and user support for those using these packages.

Appendix 1 contains a summary of the data available from the ABS at the level of the LGA.

### **3.3.3 Other ABS Products and Services**

In early 1998, the ABS addressed the need for data at the LGA level by developing *Regional Profiles*, which cost \$200 per LGA. These contain a range of socio-economic statistics collected from government agencies and the ABS. The data includes information available from the Census on education, families, income, ethnicity and employment. In addition there is information on demography, economic indicators, education, health, disability, crime and juvenile justice.

The ABS also offers an information consultancy service tailored to client needs including providing data from unpublished tables. These services are provided on a user pay basis. There are 500 libraries Australia wide, which receive ABS publications as part of the ABS library extension program.

### **3.4 A Summary of Data and Sources for the Shoalhaven LGA**

The following is a summary of the statistical indicators which are available and which we considered useful for the Shoalhaven LGA, in 1997. Not all conceptual fields were represented by indicators, due to data and time limitations. These indicators will be discussed in more detail in sections 3.5 and 3.6. This summary is presented in more detail in Appendix 2.

### **3.5 Economic Indicators**

Economic indicators are measures, which change in a predictable way in relation to overall economic activity and give a view of the present state of the economy in the light of past economic performance.

Conceptual Indicator	Indicator Available	Source	Freq
<b>1. Economic Structure</b>			
(a) <i>Employment in Various Industry Sectors</i>	No. of businesses by size and ANZSIC code	ABS	A
(b) <i>Working Conditions</i>	N.I.		
(c) <i>Business Conditions</i>	<b>Building</b>		
	New residential building approvals	SCC/ABS	M
	New non-residential building approvals	SCC/ABS	M
	Value of residential building	SCC/ABS	M
	Value of non-residential building	SCC/ABS	M
	No. of subdivisions released	SCC/LTO	A
	<b>Industry</b>		
	Industrial electricity usage	IE	A
	Industrial water usage	SCC	A
	<b>Manufacturing</b>	ABS	A
	Employment in manufacturing		
	Wages and salaries		
	Turnover		
	<b>Agriculture</b>		
	Gross value of agricultural products	ABS	A
	<b>Tourism</b>		
	Accommodation takings	ABS	Q
	Sewerage volume	SCC	D
	<b>Retail</b>		
	Employment, wages and turnover	ABS	7
	No. of retail businesses by size and ANZSIC code	ABS	A
(d) <i>Economic Activity</i>	Size of vehicle fleet	RTA	A
	Number of telephone connections	Telstra	C
	Domestic electricity usage	IE	A
(e) <i>Financial Conditions</i>	N.I.		
<b>2. Social Structure</b>			
(a) <i>Occupational Structure</i>	Employment by occupation	ABS	5
(b) <i>Type of Employment</i>	Self employed versus wage and salary earners	ATO	A
(c) <i>Labour Force</i>	Number of taxpayers	ATO	A
	Number. of wage and salary earners	ATO	A
	Number of persons in labour force	ABS	5
	Number of persons in labour force	DEWRSB	Q
(d) <i>Employee Status</i>	Number of full-time and part-time workers	ABS	5
(e) <i>Unemployment Indicators</i>	Number of unemployed persons	ABS	5
	Number of unemployed persons	DEWRSB	Q
	Labour force participation rate	ABS	5
	Unemployment rate	DEWRSB	Q
(f) <i>Educational Level</i>	Highest educational level attained	ABS	5
(g) <i>Participation in Education</i>	Number of students enrolled in Secondary Schools	Education	A
		ABS	5

(contd)

Conceptual Indicator	Indicator Available	Source	Freq
(h) Housing Condition & Costs	Cost of a residential cottage	VG	A
	Type of tenancy	ABS	5
(i). Income, Costs & Expenditure	Taxable income	ATO	A
	Mean taxable income	ATO	A
	Mean total tax paid	ATO	A
	Effective rate of tax	ATO	A
	Income data	ABS	5
(j). Social Services	Household expenditure	ABS	5
	Utilisation of health services	Medicare	A
(k). Social Conditions	Benefits paid for health services	Medicare	A
	Crime rates	Crime	M
3. Population Characteristics	Population by age and sex	ABS	A
	Population	ABS	A

**Key**

Symbol	Meaning	Symbol	Meaning
A	Annual	Crime	Bureau of Crime Statistics & Research
D	Daily	Education	Department of School Education
M	Monthly	Medicare	Medicare Legislation & Data Access
Q	Quarterly	LTO	Land Titles Office
C	Whenever ordered	RTO	Road Transport Authority
N.I.	Not investigated	VG	Valuer General
5	Census	IE	Integral Energy
3,7	Frequency in years	DEWRSB	Dept of Employment, Workplace Relations & Small Business
		SCC	Shoalhaven City Council

**3.5.1 Number of Businesses by Size and ANZSIC Code**

The examination of the number, size and predominant economic activity of businesses gives the industry profile of a region. The existence of competing and complementary businesses and the proportion of small and large businesses in specific industries can be determined.

The ABS Business Register is a list of all employing businesses in Australia and provides counts of businesses classified by their predominant economic activity, employment size, geographical location and type of legal organisation. The predominant economic activity is classified by the Australian and New Zealand Standard Industrial Classification (ANZSIC), (ABS, 1993a). Only the units which are on the register at the time of the request are included. The data are not suitable for analysis over time and comparisons with other sources of ABS data should be made with caution, (ABS, 1997a).

For the present study, information was purchased from the ABS on business units by employee size and ANZSIC code for the years 1994, 1995 and 1996. The industry profile of the Shoalhaven was compared with that of NSW as a whole by comparing the businesses classified by employment size and ANZSIC code as a percentage of the total number of businesses of that employment size. In addition, the proportions of small and large businesses were assessed as a percentage of the total number of businesses for the Shoalhaven and NSW as

seen in Figures 1 and 2.

### 3.5.2 Building Statistics

Building statistics are available from the SCC, Building Services section and the monthly ABS publication, *Building Approvals, NSW*, (ABS, 1997g) and the annual publication, *Regional Statistics, NSW*, (ABS, 1996d). In order to monitor building activity within the Shoalhaven LGA, statistics obtained from the SCC were used. For comparisons between the Shoalhaven and Coffs Harbour, Greater Taree, and NSW, the statistics in the ABS publication, *Regional Statistics, NSW*, were used. The economic indicators chosen were, Number of New Residential Building Approvals, Value of Residential Building and Value of Non-Residential Building.

Information on monthly building activity is obtained from records of applications for building permits issued by the SCC. Within the SCC, the Number of Dwellings Approved was available in annual summary from 1986, and the Value of Building was available from 1992, for the Shoalhaven LGA. The value of the dwelling is applicant determined and may be undervalued to reduce the cost of the permit.

The residential building statistics from the SCC provide a good indication of trends in this type of building activity in the region. Summaries of applications for building permits are provided to the ABS. In general, ABS data was preferred because it is available for inter-regional comparisons and data checks and screening have been performed.

### 3.5.3 Residential Subdivisions

Another economic indicator available from the council was the Number of Residential Subdivision Lots Released, which is an indicator of future building activity. Annual totals for subdivisions released in the Shoalhaven LGA were obtained for 1986 onwards for both residential and industrial subdivisions. Only data from 1992 onwards had been checked and were used in this study. The number of industrial and commercial subdivisions released in the Shoalhaven was very small and was not investigated in the study.

The information on subdivisions released is sent to the Lands Titles Office (LTO) and a monthly summary of subdivisions released or approved is sent by the LTO to the Planning Services at the SCC to allow the council to confirm their records. The information from the LTO does not differentiate between residential and non-residential lots.

### 3.5.4 Electricity Usage

Electricity usage, measured in kilowatt hours for the month of June was chosen as an indicator of industrial activity for the years 1992 to 1996. Information was obtained initially at no charge from the Wollongong office of Integral Energy. The billing information differentiates between heavy industry and commercial and domestic activity. The unit sales are subject to meter reading cycles, weather variations and tariff changes. There are special rates for industrial users. Analysis included the interpretation of billing codes, which had changed over time.

### 3.5.5 Industrial Water Usage

Water usage was used as an indicator of industrial and commercial activity. The data, derived from the Shoalhaven Water division located within the SCC, differentiates between industrial, commercial and domestic users. It was not possible to obtain this information for areas outside the Shoalhaven LGA. The data recorded are water meter readings in kilolitres for a financial year. At the time of documentation, the data held by the Water Division covered only two years, 1995 and 1996. There has been a movement towards water conservation which may affect figures. Also, weather fluctuations and water charges may affect usage. A new system was to be installed on May 1st, 1997, in the SCC. This will allow information to be stored over the years and will be more user friendly towards enquiries.

### 3.5.6 Manufacturing

Indicators of manufacturing activity were found in the ABS publication, *Regional Statistics, NSW*. This information is available annually from a small-scale census which collects data on employment, wages and salaries and turnover, (ABS, 1997d). A quinquennial (formerly triennial) full scale census collects additional data on expanded revenue, expense items and details of assets, liabilities, materials used and articles produced. The manufacturing statistics used to compare the Shoalhaven LGA with other areas were; Employment at end of June, Wages and Salaries Paid and Annual Turnover.

### 3.5.7 Agricultural Activity

Measures of agricultural activity were obtained from the ABS publication, *Regional Statistics, NSW*. These statistics were derived from the Agricultural census conducted at 31 March each year from occupiers of establishments with agricultural activity. Due to boundary changes of LGAs, the data are not suitable for time series analysis, (ABS, 1994c). There is an additional reason that agricultural activity data are not suitable for time series analysis. The former agricultural census and the present annual survey with a planned five-yearly census only covered agricultural activity above a certain value, the Estimated Value of Agricultural Output (EVAO). This cut off value has changed over time, and together with fluctuations in the price of agricultural commodities, affects the apparent number of agricultural holdings, particularly for those agricultural activities that are traditionally carried out on a small scale for example, mushroom farming. The change to a annual survey with a planned five-yearly census will mean that regional data will not be available from 1998, (Sward, 1998, p.7).

For the present study, a graphical comparison was made of agricultural statistics between the three coastal LGAs, Shoalhaven, Coffs Harbour and Greater Taree and the state of NSW. The indicators examined included the Gross Value of Agricultural Commodities Produced. Also examined was the Ratio of Gross Value of Agricultural Commodities produced as a ratio of the Total Area devoted to Agricultural Activity, or in other words, a dollars per hectare figure for agricultural activity.

A possible source of data on primary production is ATO statistics which

provide detailed tables by industry. Primary production occurs under Small Business income (SBI), Large Business Income (LBI) and Companies, (ATO, 1998).

### 3.5.8 Tourism

The indicator used was the Annual Takings from Tourism Accommodation, obtained principally from the ABS publication, *Regional Statistics, NSW*. This information enabled comparisons to be made over geographical regions and different time periods.

The tourist accommodation establishments considered were hotels, motels and guest houses and not caravan parks. The takings are the revenue from the provision of accommodation and do not include takings from meals. The data are collected from a quarterly survey of tourist accommodation establishments in NSW. As payments may be received in advance of or after the provision of accommodation, the takings from accommodation do not necessarily have a direct relationship with the number of guests accommodated during the time period, (ABS, 1996c, p.34). Other statistics available included the number of establishments, capacity in bed spaces, capacity in guest rooms, room occupancy rate during the year, and bed occupancy rate during the year.

### 3.5.9 Retailing

Due to a lack of frequent data on retail activity over any substantial time period, no monitoring of retail activity was undertaken in this study. The Retail census is conducted irregularly, with the last census being conducted in 1991-92 and was a rich source of information about shopfront locations including the number of locations, persons employed, wages and salaries, turnover and floor space, (ABS, 1994b, p.17). Monthly retail estimates such as published in the ABS publication, *Retail Trade, Australia* only provide information at a state and territory level.

The ABS Business Register classifies retail businesses to 4-digit ANZSIC and records the number of persons employed by each business. Employment can be used as an indicator of the size of the business. There is potential for data to be collected at the council. The SCC Building Services section has a form for applicants applying for the lease of commercial premises. One of the questions on this form is the area of the proposed premises. At present, the filling in of this detail on the form is not enforced. This information would be very useful and in future the SCC will endeavour to collect this information from lease applicants or site surveyors.

### 3.5.10 Size of Vehicle Fleet

The number of registered vehicles is used as a population indicator and a general indicator of economic activity, but may also reflect on the availability of public transport. The size of vehicle fleet may be obtained from RTA publications; *Vehicle Registration Statistics Annual Reports*. Annual figures are available from 1993 onwards on an LGA basis, which allows comparison with other areas. The 1995 publication had not been released at the time of this study.

The total vehicle fleet is defined as those vehicles which are currently



registered in NSW at the time data were extracted for the publication, usually May. Information available includes the number of new and second-hand vehicles, types of transfers of second-hand vehicles, selected demographic profiles of vehicle operators, vehicle use, types of fuels used, year of manufacture and make of vehicles. Supplementary information from other databases, such as type of vehicle permits issued by the RTA, have been used to augment the RTA's Vehicle Registration and Driver Licensing System (DRIVES), (RTA, 1993). The DRIVES database processes and records vehicle registration and driver licences.

### **3.5.11 Telephone Connections**

The number of business telephones is an indicator of economic activity. The number of domestic connections is a useful indicator of economic activity. With increasing use of the Internet and mobile phones, the number of domestic telephone connections may become less useful as an indicator of population size. The number of telephone connections is available from account records kept by Telstra. The information differentiates between business and domestic use and is available on an LGA basis which allows comparisons between areas. The cost may be prohibitive for small organisations at \$1,200 for an annual figure for one LGA. The cost for three LGAs for one year was \$1,500. This indicator has been documented but the data were not purchased.

### **3.5.12 Other Indicators**

Indicators which may be considered in the future include sewerage volume and the number of rateable residential properties. A potential indicator for the future may be natural gas consumption by industry, when the Shoalhaven obtains a reticulated natural gas supply, in September, 2000.

Sewerage volume may be useful as a measure of seasonal population fluctuations. The number of residential properties may be used as an indicator of housing stock. Domestic electricity usage may give an indication of the population though there are better direct measures. The Shoalhaven possess a large number of holiday homes so a decline in electricity usage may show low utilisation of holiday sites which is characteristic of a downturn in the economy.

## **3.6 Social and Population Indicators**

Traditionally, social indicators represent some measure of health, housing, crime, culture, or social status. Combined with economic indicators, this information provides a relatively complete picture of society, (Senate Standing Committee on Social Welfare, 1979, p. 86).

Institutional inputs and outputs and information on the input of financial and human resources into social programs may be taken as proxy indicators. For example, statistics on government expenditures on health or education are used as 'social indicators' rather than using indicators of actual health or education conditions. This is done because the direct measure may be unable to be found. The output of actual services provided and individual outcome such as health status and educational attainment complete the social picture, (ABS, 1984, p.xxi).

Population statistics are important, for example, in the production of per capita figures. The age composition of the population is particularly important for

social planning. Trends in the numbers of children and young adults are important in determining the need for educational services. The proportion of the population in the older age groups impacts on the planning of health and welfare services, (ABS, 1992b, p.5).

In Canada, a relationship has been established between socioeconomic status and health, (Frohlich, 1996, p.1273). There are important relationships between health and social problems, (Pampalon, 1996, 913). For example, unemployment, as well as impacting on the household economic status has a negative effect on the "social integration and psychological well-being of the individual", (Frohlich, 1996, p.1277).

Devery (1991) discovered links between disadvantage and conviction rates in LGAs outside the Sydney Statistical Division. "Disadvantage" and low socioeconomic status are associated with "proportions of single parents, Aborigines, unemployment and public renters." Also, Devery (1991) and Borooh (1996) have shown relationships between unemployment and property crime. Property crime includes burglary, theft, vandalism, fraud and forgery. Links have been established between crime and the proportion of people leaving school without qualification and growing social inequality, (Borooh, 1996, p.164).

There is a difference between the true crime rate and crime rate recorded by the police. However, changes in recorded crime rates are important as they are indicative of the changes in true crime rates, (Borooh, 1996, p.161). An increase in crime recording may sometimes be attributed to the number of police on duty (Borooh, 1996, p.164). Another reason for changes in crime rates may be changes in reporting behaviour.

The present study has been able to identify sources of indicators relating to several areas of social concern at the LGA level. These include health, education, working life and crime rates.

### 3.6.1 Population

Compared with the state growth rate of approximately 1% over the period of 1990 to 1995, the Shoalhaven experienced a growth rate of 3%, (ABS, 1996a). In the publication, *Regional Population Growth 1994-95*, the ABS examined areas of significant population change in the time periods 1990 to 1995 and 1994 to 1995. The population was examined as a whole and also by age category. The Shoalhaven SLA was placed 15th in a ranking of the 25 SLAs which had experienced the most significant population growth in Australia, in the period 1994 to 1995. In this study, population estimates have been considered and the Annual Rates of Change have been calculated from 1976 onwards.

Information on total population may be obtained from the ABS annual publication, *Estimated Resident Population of Statistical Local Areas, New South Wales*, (ABS, 1997f). This annual update is provided by taking into consideration the number of births and deaths in each LGA as well as other indicators of population change such as building approvals, school enrolments, electricity connections and Medicare enrolments, (ABS, 1982, p.3).

Every five years, as a result of the population census, the ABS publication, *Estimated Resident Population and Components of Change in Population of*

*Local Government Areas*, provides revisions of the intercensal estimates, (ABS, 1978) and (ABS, 1993c). Information about the age composition of the population may be found in the annual ABS publication, *Estimated Resident Population by Age and Sex in Statistical Local Areas, New South Wales*, (ABS, 1996f). The first issue was published in 1981,

### 3.6.2 Utilisation and Expenditure of Social Services - Health

A person must be enrolled with Medicare before a claim for Medicare benefits will be paid. The Health Insurance Commission (HIC) is able to provide information on number of enrolments, characteristics of the registrants and details of the services and benefits provided. Information such as "age, sex, diagnosis, place of residence can be used to characterise the well-being status and needs of clientele being served", (Pampalon, 1996, p.913).

An overview of the information available may be determined by an examination of the HIC annual publication, *Financial Statements and Statistical Tables*. Information on enrolments, services and benefits for the preceding three year period was purchased. The data were provided by cardholder postcode. The following information was judged useful to this study and obtained for the three LGAs of interest for the years 1994, 1995 and 1996.

- enrolments by age and sex,
- number and type of services processed by age and sex of patient,
- value of benefits processed by age and sex of patient and type of service.

Information on services and benefits were divided by the total number of enrolments to give a rate per enrolment to allow comparisons between the LGAs of interest and NSW. Services and benefits relate to professional services processed during a twelve month period, irrespective of when those services were rendered. There is a time lag between the date of service and processing which means that it is several months before the statistics are available, (HIC, 1996, p.32). Thus, it may not be a true indication of the utilisation of health services in a twelve month period.

Enrolment status of individuals is at 30 June of the relevant year. The total Medicare enrolled population is the total number of persons eligible for Medicare benefits. A Medicare registrant may be registered to an address at which they are not resident. A deceased person may not be removed from records for several months. The list of enrolments will include those temporarily overseas and temporarily resident in Australia.

Concordances are employed to convert population-based statistics from one geographic framework to another. In this study the conversion required was postcode to LGA/SLA. Data provided by Medicare or the ATO were provided on a postcode basis. These data were converted to SLA using the electronic version of the *1991 Postcode to Statistical Local Area (SLA) Concordance*, which was purchased from the ABS. This conversion is expressed as a percentage of each postcodes's population in the SLA(s) covered by the postcode's area. The ABS has developed a number of geographic concordances including the conversion of postcode data to the geographical levels of SLA, LGA and SD, (ABS, 1991).

### 3.6.3 Participation in Education

In the period 1990 to 1995, there was a significant population growth in the age category 5 to 19 years in the Shoalhaven SLA consisting of an increase of 666 persons and a growth rate of over 4% from 1994 to 1995. The Shoalhaven SLA was ranked tenth in the nation in terms of population growth in this particular age category. This growth will impact on the need for educational facilities in the area, (ABS, 1996a).

The ABS publication, *Social Indicators* uses educational institution enrolment as an indicator. The indicator used in this study is annual secondary school enrolment. Primary school enrolment may give a indication of the future need of high schools. However, the primary schools in the Shoalhaven region were smaller and more numerous than secondary schools. It was felt that the high school enrolment was a more manageable indicator both in terms of data entry, contact of non-government schools and extending the indicator beyond the LGA. Enrolment by grade was also available.

Information on state school enrolment may be obtained at the LGA level from the Department of School Education Properties Directorate. A listing of private schools may be obtained from this department. Private schools were contacted directly for enrolment information. Enrolment is taken at a point in time and is not subject to updates during the year.

The indicator used is an annual enrolment figure available from 1977 onwards for state and private schools in the Shoalhaven LGA. These data do not include students who leave the region to attend boarding and day schools outside the Shoalhaven LGA. Another potential indicator may be school retention rates.

### 3.6.4 Labour Force

The Labour Force Survey, which is conducted by the ABS produces monthly labour force estimates for state, national and regional level. Estimates are available for the Illawarra Statistical Region (SR) but not the Shoalhaven LGA, (ABS, 1985, p.1). A SR is a large statistical general purpose regional type spatial unit used to present population census statistics and disseminate regional labour force statistics. In NSW the population of a SR is approximately 250,000, (ABS, 1994d).

It was decided to use the Number of Taxpayers and the Number of Wage and Salary Earners obtained from the Australian Taxation Office's annual publication, *Australian Taxation Statistics*, as indicators of persons in the labour force. The data were examined as Number of Taxpayers per Capita and Number of Wage and Salary Earners as a Percent of Total Number of Taxpayers over the period 1989-90 to 1994-95. These data are a conservative estimate of the number of employed persons. A taxpayer is defined as a person who has a positive value for net tax. Some taxpayers actually have no net tax as the amount of tax owed is cancelled out by rebates.

Unfortunately, back copies of the ATO's publications may not always be available, but most libraries hold these publications. From the 1994-95 edition, the tables are available on CD, which facilitates data export into a statistical application, (ATO, 1997).

3.6.5 Type of Employment

An estimate of the number of self employed and wage and salary earners may be obtained from the ATO annual publications, *Australian Taxation Statistics* from 1992-93 to 1994-95. The Number of Wage and Salary Earners and the Number of Taxpayers as proportions of the number of taxpayers can be determined. According to the criteria employed by the ATO, Taxpayers per Industry are self-employed persons classified by the industry from which they derive the greatest total income or incurred the smallest loss, (ATO, 1996, p.4). The ATO recommends that the classifications "property", "total primary production" and "other business subsidiaries" not be included in the estimate of Number of Taxpayers. The criterion "property" refers to those persons who obtain their income from investment property and with no income from other sources such as business and not classified as wage and salary earners. The criterion, "other business subsidiaries" refers to those persons who receive income through a business or trust. A limitation of the data is that a person may be both a wage and salary earner and self-employed but the ATO will classify them in the category to which the bulk of their income can be attributed.

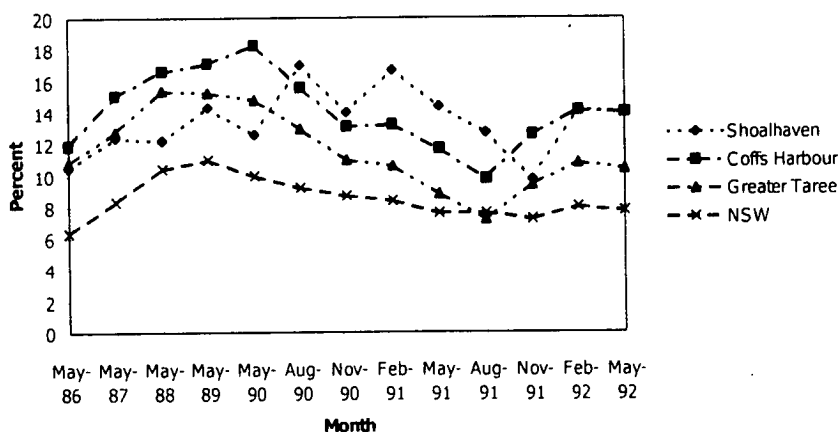


Figure 3. Annual Percent Employment Rate in Three Coastal SLAs and NSW 1990-96



recipients from the Commonwealth Service Delivery Agency. The request must specify postcodes and the type of benefits: labour market, pension or parenting.

The ABS produces monthly unemployment figures and unemployment rates as a result of its labour force survey. These are only available for the Illawarra Statistical Region which contains the Shoalhaven LGA and the Wollongong LGA and are subject to relatively high sampling errors, (ABS, 1992a). The Economic Analysis Branch of DEWRSB uses a statistical modelling approach, Structure Preserving Estimation (SPREE) to obtain estimates of the number of unemployed persons and unemployment rates. Quarterly data are used as it provides a less volatile and more reliable estimate than monthly figures. The SPREE methodology uses the monthly regional estimates from the ABS labour force survey in combination with small area information about the recipients of labour market benefits including, Job Search, Youth Training and Newstart allowances. The estimates may be unreliable for some very low population SLAs. The SPREE estimates are not really comparable with any ABS unemployment figures produced at the level of the state, (DEWRSB, 1996, p.1)

### 3.6.7 Income

Personal income is the income received by individuals from wages and salaries, rent interest and dividends. The indicators chosen as measures of personal income for the present study were obtained from issues of the ATO publication, *Taxation Statistics* and included Taxable Income, Mean Taxable Income, Mean Total Tax and Effective Rate of Tax. Taxable income was examined per capita, per wage and salary earner and per taxpayer. The information was examined from the 1989-90 tax year onwards. Figure four shows a comparison of the annual taxable income in thousands of dollars per capita between the three coastal LGAs and NSW for the tax years 1989-90 to 1994-95. Some pensioners with interest income need to lodge a tax return only during periods of high interest, so that the number of taxpayers increases when interest rates rise and falls when interest rates fall.

The ATO data are available at a postcode level and were aggregated to SLA using the 1991 Postcode to SLA Concordance. There may be erroneous and missing postcodes in the ATO data. When the postcode is omitted or the taxpayer is resident overseas, the postcode of the current postal address was used by the ATO. Postcodes with fewer than 100 returns were not documented but included in the 'Others' group for the state or territory, (ATO, 1997). The postcodes may also include those for mail boxes at postal centres. The ATO does not edit the reported postcode for the home address as they do not require it for their administrative purposes. When postcodes on returns are not valid, they are grouped in an "Invalid" category, (ATO, 1997).

### 3.6.8 Housing Costs - Mean Value Residential Cottage

The average cost of housing may be reflected in the indicator Mean Value of a Residential Cottage. The data were available from 1979 onwards for various NSW cities and towns, which allowed comparisons to be made over time and geography. The source of information is the Valuer-General's Department (VG). Data were obtained from the tables of the 1993 and 1996 editions of the

publication, *New South Wales, Real Estate Values*. The figures are obtained from a study of prices paid for real estate throughout NSW. Details of completed property transactions are provided to the Valuer-General by purchasers through the Land Titles Office. The values given are estimates made by valuers of the fair market value, at the 30th of June, for a typical property for the nominated locality. As there is a large number of property types, a representative property is selected which provides an indication of market trends, (VG, 1993, p.3).

Current copies of this publication may be ordered from the Government Information Service. Back copies of the books may be viewed but not ordered at any office of the Valuer-General.

A disadvantage of these data were that values are given for Nowra only and not for other towns in the Shoalhaven LGA. Also, included are the values of the following property types; single dwelling site, single shop site, modern shop rental and hobby farm sites. An advantage is that information is available for towns in other LGAs. In particular, data were available for the centres Coffs Harbour and Greater Taree. Coastal, inland and metropolitan averages are also provided.

### 3.6.9 Social Conditions - Crime

Crime is a measure of individual safety and general societal well-being. In this study, the indicator is the number of crime incidents reported obtained at no charge from the NSW Bureau of Crime Statistics and Research. There is now a minimal cost incurred for data requests.

The data are provided on a monthly basis for the Shoalhaven LGA from April 1994 onwards. These figures represent incidents reported rather than convictions. Offences were classed in categories following guidelines used by the NSW Bureau of Crime Statistics and Research. These were Offences Against the Person, Assault Causing Bodily Harm, Sexual Assault, Property Offences, Theft, Breaking and Entering, Drug Offences, Offensive Behaviour and Driving Offences.

### 3.7 Data Screening

When data are recorded but not published, there is the possibility that routine data checks have not been performed. The primary tool in data screening was graphical comparison. Suspect values were investigated by comparing to a similar series, checking with the organisation which collected the data or comparing to a data series collected by the ABS.

One of the first tasks of data screening was to investigate and document the method and reliability of collection. A summary was compiled on how well the collected information fulfilled the selection criteria including availability, reliability, cost, timeliness, geographical comparability and comparability over time. The form of the data; published or electronic was recorded. Whenever possible data was obtained electronically in order to minimise the time to enter information.



#### 4. DATA MANAGEMENT

One of the aims of this study was to provide the means for the SCC to collect and store data to monitor the Shoalhaven's economic and social conditions. The software used would need to be accessible to staff in the Economic Development Section of the SCC, and for which they possessed the appropriate skills.

A database of economic and social indicators was established in an EXCEL workbook. This software application was chosen as it was already available and the staff in the Economic Development section were familiar with its use. In this way, the database could be maintained in the future by the section staff entering data as it becomes available.

The EXCEL application offers several advantages including the capacity to link spreadsheets and produce simple graphs.

A manual was produced containing the following information .

- type of economic indicator;
- source of data;
- scope and coverage;
- contacts used to obtain data;
- costs incurred in purchasing data;
- availability of data, for example when to order;
- appropriate graphs including time series.

The ease of use of EXCEL and the documentation provided will enable the project to be maintained in the future regardless of staff changes.

#### 5. DISCUSSIONS AND CONCLUSIONS

This case study has shown how a set of indicators was established to enable the SCC to monitor the main social and economic characteristics of the Shoalhaven LGA. Important criteria in selecting indicators of key economic, population and social characteristics included data availability, reliability, geographical comparability and comparability over time. Key aims were to identify sources of data that were available more frequently and in a more timely fashion than published sources of data. This has resulted in a summary of the availability and timeliness of statistical data available at the level of the LGA, not only from the ABS but also from other sources. Local councils collect a great deal of information in the course of their administrative activities. The Economic Development section of SCC is now aware of and able to use the data collected by other departments within the SCC. In the future, some changes to the indicators may be necessary after the changes in Government policy including introduction of the GST and the "Work for the Dole" program.

Most of these data are available on annual or more frequent basis that should allow EXCEL graphs monitoring these indicators to be easily and regularly updated. Graphs were also used to compare the Shoalhaven LGA with two other coastal LGAs, Coffs Harbour and Greater Taree and a NSW benchmark. As in any compilation of data from multiple sources, data screening played an important role in determining the method and reliability of collection and consistency with similar indicators.

The true test of the usefulness of this set of indicators is how it is being already used by local planners in this regional LGA. To local planners equipped with local area knowledge, these indicators have provided valuable information enabling them to interpret, monitor and plan for change. They have facilitated informed debate and decision making. This is best illustrated by some examples. High population growth during 1991-96 occurred in coastal regions of Australia. This growth is usually attributed to the attraction of older people to the coast as a place of retirement, (ABS, 1998a, p.25). The data on Estimated Resident Population showed that the Shoalhaven LGA experienced an increase in the population of older people consistent with this "coastal drift". However, the data on Secondary School Enrolments showed that there is also strong growth in the school aged population and thus young families. Further examination of the school enrolment showed planners that the increase in school enrolments in 1992-93 could be attributed to the establishment of a Catholic Secondary school in the area. Previously, students had been commuting out of the area to attend private schools. This information will assist the council in the future in the planning for school sites, both public and private, and planning of facilities for young families.

Local planners had noticed that there was an increase in the number of vacant shop sites in Nowra. Data from the VG showed that real estate values for purchases and rentals for single shop sites were higher in Nowra than for Coffs Harbour or Greater Taree. Thus, the vacancy rate was not just a sign of an economic downturn but could be explained by the relatively high cost of purchases and rental.

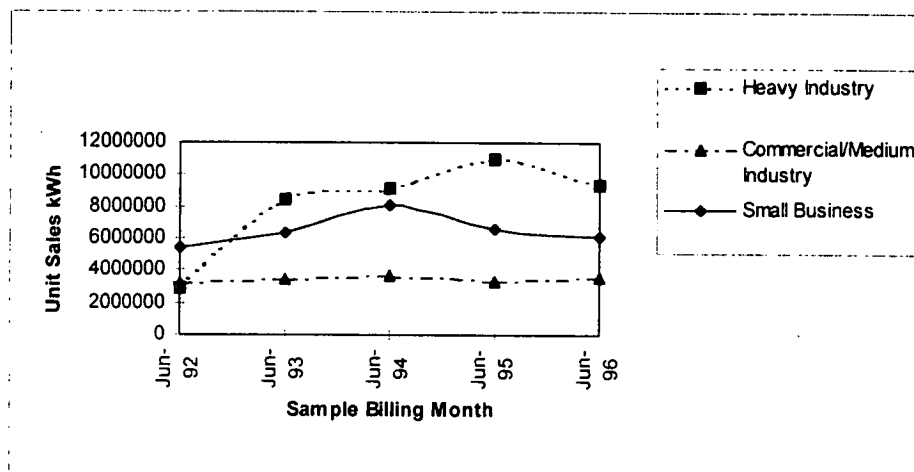


Figure 5. Commercial Energy Use in the Shoalhaven 1992-96

Using a combination of the SCC and ABS data, local building statistics can be compared with national trends. The local economy has been shown to mirror national trends but may be more volatile. In turn these cycles in the construction industry will affect unemployment in the region.

Traditional indicators of economic activity are in agriculture, manufacturing and tourism. Data on the total area of agricultural establishments from the ABS, supports local observation that the amount of area devoted to agriculture is declining. At the same time gross value of agricultural activity is increasing. Seasonal fluctuations such as poor local seasons can be seen in the data for 1989. However, these observations over time are subject to the limitations mentioned in section 3.5.7. Manufacturing activity has been sponsored by local economic development organisations and the success of these efforts can be seen as manufacturing activity is increasing, as measured by ABS indicators of turnover and employment. This observation was also supported by the graph of the alternative indicator, energy use by heavy industry obtained from Integral Energy as shown in Figure 5.

Another useful tool has been to look at economic activity relative to the LGA size. For example, graphs of the three coastal LGAs have been constructed of the Ratio of Dwellings per Capita, Gross value of Agricultural Production per Hectare, Manufacturing Turnover per Employee. An example of this is Figure 6, which shows Manufacturing Productivity: Manufacturing Turnover in \$'000 per Employee for the three coastal LGAs and NSW.

The incidence of driving and drug offences are being used as indicators for the need for social programs targeted at the region's youth. At the same time, comparisons of the rate of local crime incidence per 100,000 with other areas and the state give a more realistic social picture of the Shoalhaven LGA.

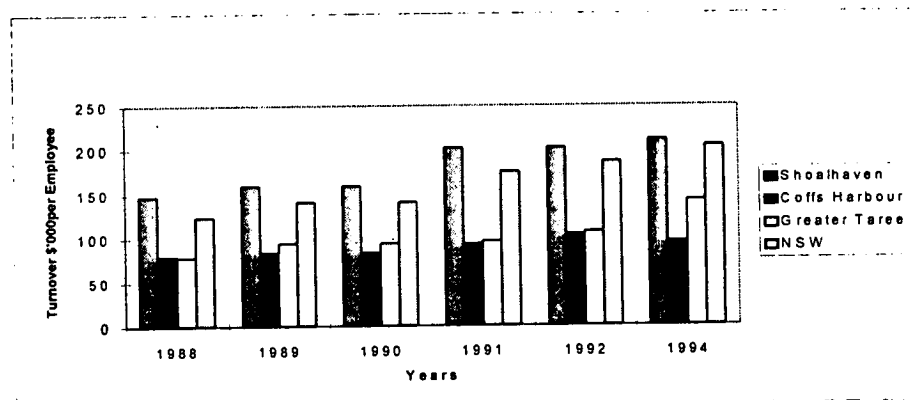


Figure 6. Manufacturing Productivity: Manufacturing Turnover in \$'000 per Employee in Three Coastal LGAs and NSW 1988-94

Quinquennial census information on average taxable income from the Census of Population and Housing has been supplemented by the annual information available from the ATO. The indicator Total Taxable Income has been used to assess the size of the local economy.

This case study provides a snapshot of the statistics available at the level of the LGA, in 1997. Though changes in the availability of statistics are inevitable, it is hoped that this paper may provide a guide to other local government bodies that wish to develop a compatible database of indicators to monitor economic and social conditions in their region.

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Appendix 1. Summary of Regional Data and Sources from the Australian Bureau of Statistics

Conceptual Field	ABS Code	Title	Data	Level	Availability	Frequency
Economic Structure	1304.1	Regional Statistics, NSW	Population Building Agriculture Manufacturing Tourist	LGA	1956-1998	Annual
Economic Structure Social Structure	1353.1	IRDB, NSW	Social Economic Environmental	SLA	First Issue: 1986-94 Latest: 1997	Annual
Economic Structure Social Structure	2017.1	Census of Population and Housing Selected Family and Labour Force Characteristics for SLAs, NSW	Social Economic	SLA	Latest 1996	5 Yearly
Economic Structure Social Structure	2522	CDATA86- Census of Population and Housing: Summary Data on , CD-ROM	Population and Housing	SLA LGA CD	1986	
Economic Structure Social Structure	2721.1	CDATA91- Census of Population and Housing: Summary Data on CD-ROM (NSW)	Population and Housing	SLA LGA CD	1991	

Appendix 1 (contd). Summary of Regional Data and Sources from the Australian Bureau of Statistics

Conceptual Field	ABS Code	Title	Data	Level	Availability	Frequency
Economic Structure	2019.1	CDATA96- Census of Population and Housing: Summary Data on CD-ROM (NSW)	Population and Housing	SLA	1996	
Social Structure				LGA		
Population Characteristics	3208.1	ERP and Components of Change in Population of SLAs in NSW	Population Population Growth	SLA	1976-1981 1981-1986 1986-1991	5 Yearly
Population Characteristics	3209.1	ERP by Age and Sex in SLAs, NSW	Population	SLA	1981-1997	Annual
Population Characteristics	3210.1	ERP of SLAs in NSW, at 30 June	Population	SLA	1983-1997	Annual
Population Characteristics	3218	Regional Population Growth, Australia	Population Age Categories	SLA	1993-1997	Annual
Population Characteristics	3311.1	Demography, NSW	Births and Deaths	LGA	1990-1997	Annual
Economic Structure	5502.1	Local Government Finance, NSW	Finance	LGA	1974-1993	Annual
	5502.1.15.001	Local Government Finance, NSW	Finance	LGA	1993-1997	Annual

Source: ABS Catalogue of Publications and Products



Appendix 1 (contd). Summary of Regional Data and Sources from the Australian Bureau of Statistics

Conceptual Field	ABS Code	Title	Data	Level	Availability	Frequency
Economic Structure (contd)	5512	Government Finance Statistics, Aust	Finance	Level of Govt	First Issue: 1989-90 Latest: 1997	Annual
Economic Structure	6536	AUSPEND	Household Expenditure	Small Area	First Issue: 1988-89 Latest: 1995	Irregular
Economic Structure	7115	AgStats on CD Rom	Area Crops Livestock	Small Area	1985-86 to 1987-88 1985-86 to 1992-93	Irregular Discontinued
Economic Structure	7117	AgStats on Floppy Disk Selected Small Area Data, NSW	Area Crops Livestock	Small Area	First Issue: 1982-83 Latest: 1997	Annual
Economic Structure	7120.1	Agricultural Statistics - Selected Small Area Data, NSW	Area Crops Livestock	SLA	First: 1990-91 Latest: 1995	Annual Discontinued
Economic Structure	8623.1	Retailing in NSW	No. of Locations Employment Wages/Salaries Turnover	Selected SLA	First: 1968-69 Latest: 1991-92	Irregular

Source: ABS Catalogue of Publications and Products

Appendix 1 (cont'd). Summary of Regional Data and Sources from the Australian Bureau of Statistics

Conceptual Field	ABS Code	Title	Data	Level	Availability	Frequency
Economic Structure	8635.1	Tourist Accommodation, NSW	No. of Establishments Capacity Occupancy Rates Employment Takings	SLA	September 1975 - December 1997	Quarterly Discontinued
Economic Structure	SDS	Standard Data Service (SDS) Tourism		LGA/SLA	March 1998	Quarterly
Economic Structure	8731.1	Building Approvals, NSW	Number Value	SLA	August 1957 - December 1997	Monthly
Economic Structure	8741.1	Dwelling Unit Commencements Reported by Approving Authorities NSW	Number Value	SLA	July 1980 - September 1996	Monthly Discontinued
Economic Structure	9312.1	TranStats, NSW	Vehicle : Make Type and Year	Post Code	September 1988 1994	Irregular
Economic Structure		Business Register Service	Business by Employee Size Business by Industry Type	SLA Postcode		Yearly

Source: ABS Catalogue of Publications and Products

Appendix 2. Summary of Alternative Data and Sources for the Shoalhaven LGA

Conceptual Indicator	Indicator Available	Source Of Information	Frequency	Availability	Form	Cost per Year	Publication
Economic Structure							
Employment by Industry	Business Locations by Size & ANZSIC Code	ABS Business Register Service	A	1994->	E	250	
Business Conditions - Building	New Residential Building Approvals	SCC, Building Services	M	1986->	P/E	None	
	New Non-residential Building Approvals	SCC, Building Services	M	1986->	P/E	None	
	New Residential Building Value	SCC, Building Services	M	1992->	P/E	None	
	New Non-residential Building Value	SCC, Building Services	M	1992->	P/E	None	
Business Conditions - Future Building	No. of Subdivisions Released	SCC, Subdivisions	A	1992->		None	
Business Conditions - Industry	Industrial Electricity Usage	Integral Energy	A	1992-1996	P	On Request	
	Industrial Water Usage	SCC, Water Division	A	1995 -1996	E		
Business Conditions - Retail	No. of Retail Businesses by Size & ANZSIC Code	ABS Business Register Service	A	1994->	E	250	

Appendix 2 (contd). Summary of Alternative Data and Sources for the Shoalhaven LGA

Conceptual Indicator	Indicator Available	Source Of Information	Frequency	Availability	Form	Cost per Year	Publication
Business Conditions - Tourism	Sewerage Volume	SCC, Water Division Wastewater Services	D	1989->	P	None	
Economic Activity	Size of Vehicle Fleet	RTA	A	1993->	P	30	Vehicle Registration Statistics
	No. of Telephone Connections	Telsira	C			1200	
	Domestic Electricity Usage	Integral Energy	A	1992-1996	P	On Request	
Social Structure							
Type of Employment	Self employed versus Wage and Salary	ATO	A	1992-93	P	25	Taxation Statistics
Labour Force				-> 1994-95			
	Number of Taxpayers	ATO	A	1992-93	P	25	Taxation Statistics
	Salary & Wage Earners on Group Certificates	ATO	A	-> 1994-95	P	25	Taxation Statistics
	Labour Force	DEWRB, Regional Analysis & Policy Section	Q	1980s ->	E	250	
Unemployment	Number of Unemployed Persons	DEWRB, Regional Analysis & Policy Section	Q	TS 1993 ->	P	None	Small Area Labour Statistics
	Unemployment Rate	DEWRB, Regional Analysis & Policy Section	Q				

Appendix 2 (contd). Summary of Alternative Data and Sources for the Shoalhaven LGA

Conceptual Indicator	Indicator Available	Source Of Information	Frequency	Availability	Form	Cost per Year	Publication
School Enrolment	No. of Students Enrolled in Secondary Schools	Dept. of School Education,	A	1977->	P	None	
		Properties Directorate & Private Schools					
Housing Costs	Cost of a Residential Cottage	Valuer General	A	1979->	P	25	NSW, Real Estate Values
Income	Taxable Income	ATO	A	-> 1994-95	P/E	25	Taxation Statistics
	Mean Taxable Income	ATO	A	-> 1994-95	P/E	25	Taxation Statistics
	Mean Total Tax Paid	ATO	A	-> 1994-95	P/E	25	Taxation Statistics
	Effective Rate of Tax	ATO	A	-> 1994-95	P/E	25	Taxation Statistics
Utilisation of Health Services	Utilisation of Health Services by Type of Service	Medicare Legislation and Data Access	A	Previous	E	200	
	Benefits Paid by Type of Service		A	5 years		Per Table	
Social Conditions	Crime Rates	NSW Bureau of Crime Statistics and Research	M	April 1994 ->	P	< \$100	
					E		
<b>Key</b>							
ATO	Australian Taxation Office	A	Annual	P	Printed	TS	Time Series
DEWSB	Department of Employment, Workplace Relations and Small Business	M	Monthly	E	Electronic, i.e. Disk	C	Customer Determined
		Q	Quarterly	CD	CD-ROM		