

# SKILLS *Tasmania*

## Workforce Analysis

An analysis of 2006 ABS Population Census data relating to Tasmanian workforce characteristics to inform planning for post-compulsory education and training

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## I. HIGHLIGHTS

- Tasmania's Retail, Manufacturing, and Health Care and Social Assistance industries were the State's highest employers, accounting for almost one third of the Tasmanian workforce at the time of the 2006 Census (Table 2.1).
- Tasmania's ageing population is clearly evident in the data. In 2006, 41% of the Tasmanian workforce was aged 45+, a growth of five percentage points since 2001 (Tables 3.1 & 3.2).
  - Occupations that experienced the most dramatic workforce ageing include Sales Representatives and Agents; Health and Welfare Support Workers; and Other Technicians and Trade Workers. The only occupation to buck the ageing trend was Construction Trade Workers who experienced a growth of six percentage points in the proportion of workers aged 15-19 years (Table 3.2).
  - Over one half of Tasmania's industries had over 40 per cent of their workforce aged 45+, compared to one quarter in 2001. Road Transport; Education and Training; Agriculture and Fishing; and Healthcare and Social Assistance had over half of their workforce in the 45+ age category (Table 3.4).
- Fifty (50) per cent of Tasmania's workforce were working in an occupation that was considered highly skilled (Table 5.1), compared to 52 per cent for Australia.
- Just over one in ten employed Tasmanians were combining work with study (Table 6.1).
- There was an increase of between three to four percentage points of the Tasmanian workforce that had a VET or Higher Education qualification between 2001 and 2006, however between 48 and 51 per cent still did not have a post-school qualification (Tables 7.1 to 7.4).
- The majority of Education, Health, Legal, Social and Welfare professionals held a degree or more, indicating the trend toward a university-based qualification being the minimum qualification needed to enter these occupations. The data suggests Health and Welfare Support Workers occupations also required post-school training as entry into employment, with 70 per cent of its workforce holding a Certificate III or higher (Table 7.2).
- The impact of apprenticeships and traineeships is evident. The data shows that a large proportion of Technicians and Trade Workers held Certificate III and IV qualifications (Table 7.2).
- There was a shift toward higher level skills, with a 2.5 percentage point drop in Certificate I&II qualifications between 2001 and 2006. Certificate III and IV qualifications grew by 1.4 percentage points, while Degree or more qualifications grew by one percentage point (Table 7.4).

## 2. THE WORKFORCE

The data shows that there were 204,739 people in the workforce in Tasmania at the time of the 2006 Census. Their location by industry and region is shown in Table 2.1. Note that 'manufacturing' (highlighted) is split into component parts to provide a more complete picture. In total it comprised eleven per cent of all industries.

**Table 2.1: Workforce by industry sector and region - 2006**

Industry	People employed				
	Tasmanian total		Regional proportions		
	Number	Proportion	Greater Hobart-Southern	Northern	Mersey-Lyell
Accommodation and Food Services	14,209	7%	52%	28%	21%
Administrative and Support Services	5,465	3%	46%	27%	27%
Agriculture, Forestry and Fishing	11,388	6%	35%	34%	32%
Arts and Recreation Services	2,908	1%	63%	27%	10%
Construction	13,677	7%	51%	28%	21%
Education and Training	16,921	8%	52%	29%	19%
Electricity, Gas, Water and Waste Services	2,895	1%	66%	21%	13%
Financial and Insurance Services	5,334	3%	54%	35%	12%
Health Care and Social Assistance	23,339	11%	53%	28%	19%
Information Media and Telecommunications	3,314	2%	62%	27%	11%
Food, Beverage and Tobacco Product Manufacturing	6,355	3%	41%	22%	36%
Wood & Paper Product Manufacturing	3,609	2%	34%	34%	32%
Metal Product Manufacturing	3,392	2%	36%	49%	16%
Machinery and Equipment Manufacturing	1,676	1%	23%	18%	59%
Textile, Leather, Clothing and Footwear Manufacturing	1,165	1%	48%	21%	31%
Furniture and Other Manufacturing	661	0%	46%	41%	13%
Other Manufacturing	4,346	2%	47%	31%	22%
Mining	1,626	1%	13%	20%	67%
Other Services	7,043	3%	51%	27%	21%
Professional, Scientific and Technical Services	8,909	4%	62%	24%	14%
Public Administration and Safety	17,234	8%	67%	19%	14%
Rental, Hiring and Real Estate Services	2,873	1%	55%	29%	16%
Retail Trade	24,455	12%	50%	28%	21%
Transport, Postal and Warehousing	9,382	5%	44%	29%	27%
Wholesale Trade	7,365	4%	41%	36%	23%
Undefined	5,199	3%	49%	28%	23%
<b>Total</b>	<b>204,739</b>	<b>100%</b>	<b>51%</b>	<b>28%</b>	<b>21%</b>

Source data: ABS 2006 Census

Created by: Strategy Team, Skills Tasmania

Retail, manufacturing, and health care and social assistance industries stood out as the highest employers. Together they accounted for almost one third of the Tasmanian workforce. Education and training, public administration and safety, construction, accommodation and food services, and agriculture were also significant employers.

Over half of the workforce was located in the southern area of Tasmania. Greater Hobart-Southern dominated in a number of industry sectors including public administration and safety, electricity, gas, water and waste services, arts and recreation, information media and telecommunications and professional, scientific and technical services. The north of the state had high employment in agriculture, forestry and fishing, finance and insurance, metal products, wood and paper products, furniture manufacturing and wholesale. The north-west had high employment in mining, machinery and equipment manufacturing, food, beverage and tobacco manufacturing, and agriculture, forestry and fishing.

Note that some areas of employment often associated with a primary industry (e.g. fish processing or sawmilling) were actually included within manufacturing.

Due to the changes in industry sector classifications with the introduction of ANZSIC 2006, 2001 and 2006 data could not be compared.

This data may assist policy makers to recognise and build on regional and local advantage enabling improved planning to develop, attract and retain the skills required to meet local community and industry needs and to act on new opportunities for local and state wide growth (refer to key action area Build on Local Advantage, within the *Tasmanian Skills Strategy*). It may also assist in identifying potential regions that may be adversely affected by economic conditions, such as the current global financial crisis.

**Policy Responses** could include:

- Targeting skills investment to support and build the workforce development capacity of priority industries (current and future) in a way that incorporates the different needs and circumstances of individual regions/localities. Key actions could include:
  - increasing the number of people participating in Tasmanian Government Workforce Development Programs; and
  - increasing the number of people undertaking a Diploma and above qualification relating to organisational learning, capability development and/or workforce planning.
- Developing flexible skills investment mechanisms that enable State Government to respond quickly and appropriately to rapid changes in economic conditions that have an impact on employment.

### 3. WORKFORCE AGE

Tasmania has an ageing population and the age of the workforce is a critical issue for planning. The ABS Census provides data related to age groups that can be looked at several ways.

Table 3.1 breaks down age by occupation group. Forty two (42) per cent of the workforce was 45 years or older, representing a five percentage point increase from 2001. Several occupations had over half of their workforce population aged in the 45+ group, including farmers, managers, education professionals, health professionals, health and welfare support workers, and road and rail drivers.

Conversely 'other sales support workers' stood out as having a very high youth component and was the only occupation with less than one quarter of its workforce in the 45+ age bracket. Trade occupations generally had a significant proportion of youth and mid-range aged employees.

**Table 3.1: Workforce Age Groups By Occupation - 2006**

Occupation	Age				Total
	15-19	20-24	25-44	45+	
Farmers and Farm Managers	1%	3%	32%	64%	100%
Other Managers	1%	4%	44%	51%	100%
Other Professionals	1%	7%	50%	42%	100%
Health Professionals	0%	5%	44%	51%	100%
Education Professionals	0%	5%	40%	54%	100%
Health and Welfare Support Workers	1%	4%	45%	50%	100%
Other Community and Personal Service Workers	9%	14%	43%	35%	100%
Engineering, ICT and Science Technicians	2%	10%	48%	41%	100%
Automotive and Engineering Trades Workers	10%	13%	45%	32%	100%
Construction Trades Workers	12%	14%	42%	33%	100%
Electrotechnology and Telecommunications Trades Work	8%	13%	44%	35%	100%
Food Trades Workers	11%	17%	45%	27%	100%
Skilled Animal and Horticultural Workers	5%	9%	44%	42%	100%
Other Technicians and Trades Workers	8%	12%	42%	38%	100%
Clerical and Administrative Workers	3%	9%	45%	43%	100%
Sales Representatives and Agents	2%	8%	44%	47%	100%
Other Sales Support Workers	27%	17%	32%	23%	100%
Road and Rail Drivers	1%	4%	40%	55%	100%
Other Machinery Operators and Drivers	3%	9%	50%	38%	100%
Labourers	11%	10%	41%	38%	100%
<b>Workforce</b>	<b>6%</b>	<b>9%</b>	<b>43%</b>	<b>42%</b>	<b>100%</b>

Source data: ABS 2006 Census

Created by: Strategy Team, Skills Tasmania

Table 3.2 examines the change in age versus occupation from 2001 to 2006. As you would expect, all occupations showed signs of an ageing population, with sales representatives and agents, health and welfare support workers, and other technicians and trades workers featuring prominently.

There was only one case of a reverse trend when examining age versus occupation. The proportion of 15-24 year old construction trades workers grew by ten percentage points over the five year period, with only slight growth in the 45+ age bracket. This is a likely reflection of the boom in construction over 2001 to 2006, which resulted in an immediate need for labour and attractive salaries for young people.

**Table 3.2: Workforce Age Groups By Occupation - percentage point changes from 2001 to 2006**

Occupation	Age (yrs)			
	15-19	20-24	25-44	45+
Farmers and Farm Managers	-	-	-4%	4%
Other Managers	-	1%	-3%	2%
Other Professionals	-1%	-	-	2%
Health Professionals	-	-	-8%	7%
Education Professionals	-	-	-7%	7%
Health and Welfare Support Workers	-	-	-11%	11%
Other Community and Personal Service Workers	-	1%	-5%	4%
Engineering, ICT and Science Technicians	1%	2%	-7%	4%
Automotive and Engineering Trades Workers	2%	-	-8%	6%
Construction Trades Workers	6%	4%	-12%	2%
Electrotechnology and Telecommunications Trades Workers	2%	1%	-7%	4%
Food Trades Workers	-1%	-	-1%	1%
Skilled Animal and Horticultural Workers	-	1%	-4%	3%
Other Technicians and Trades Workers	-	-1%	-9%	10%
Clerical and Administrative Workers	-1%	-	-6%	7%
Sales Representatives and Agents	-	-1%	-11%	12%
Other Sales Support Workers	-3%	-1%	-2%	5%
Road and Rail Drivers	-1%	-	-8%	8%
Other Machinery Operators and Drivers	-3%	-1%	-5%	9%
Labourers	-	-	-5%	5%
<b>Workforce</b>	-	-	<b>-5%</b>	<b>5%</b>

Source data: ABS 2006 Census

Created by: Strategy Team, Skills Tasmania

Table 3.3 looks at how occupations contribute to the employment of each age group.

As one would expect, Table 3.3 shows that 15-19 year old Tasmanian's predominantly worked in sales (as support workers), as labourers, or in the community and personal services sector (i.e. hospitality). The proportion of this age group as labourers grew by 5 percentage points from 2001 to 2006.

While the 15-24 year old age group was predominantly working in the same sectors as the 15-19 year old age group, 14 per cent of Tasmanian 20-24 year olds also worked in clerical or

administrative roles and 13 per cent in other community and personal service workers. Only 16 per cent of 20-24 year olds worked in sales support roles compared to 35 per cent of 15-19 year olds. This could signify the completion of tertiary study and the consequent shift in type of employment for this group.

Dominant occupational sectors for the Tasmanian workforce in 2006 were labour-related work, clerical and administrative roles and for those 25 years and over, 'other managers'.

**Table 3.3: Workforce Occupation By Age Groups - 2006**

Occupation	Age (yrs)				Total
	15-19	20-24	25-44	45+	
Farmers and Farm Managers	-	1%	2%	4%	3%
Other Managers	2%	4%	11%	13%	10%
Other Professionals	1%	6%	10%	9%	9%
Health Professionals	-	2%	4%	5%	4%
Education Professionals	-	2%	4%	6%	5%
Health and Welfare Support Workers	-	1%	1%	1%	1%
Other Community and Personal Service Workers	12%	13%	9%	8%	9%
Engineering, ICT and Science Technicians	-	2%	2%	2%	2%
Automotive and Engineering Trades Workers	5%	5%	4%	3%	4%
Construction Trades Workers	5%	4%	3%	2%	3%
Electrotechnology and Telecommunications Trades Workers	2%	2%	2%	2%	2%
Food Trades Workers	3%	3%	2%	1%	2%
Skilled Animal and Horticultural Workers	1%	1%	1%	1%	1%
Other Technicians and Trades Workers	2%	3%	2%	2%	2%
Clerical and Administrative Workers	7%	14%	15%	15%	14%
Sales Representatives and Agents	-	1%	2%	2%	1%
Other Sales Support Workers	35%	16%	7%	5%	9%
Road and Rail Drivers	1%	1%	3%	4%	3%
Other Machinery Operators and Drivers	2%	4%	5%	4%	4%
Labourers	21%	14%	12%	12%	13%
<b>Workforce</b>	100%	100%	100%	100%	100%

Source data: ABS 2006 Census

Created by: Strategy Team, Skills Tasmania

It is also useful to look at age based data by industry sector. Table 3.4 does this.

It also shows that the Tasmanian workforce is ageing:

- Agriculture and fishing, road transport, education and training, and health care and social assistance had over 50 per cent of their population aged 45 or more.
- One half of all of the industries listed had over 40 per cent of their population aged 45 or more.
- Just over one quarter of the people in food retailing and just under a quarter of the people in accommodation and food services were aged 15-19.

**Table 3.4: Workforce Age Groups by Selected Industry Sectors, proportions - 2006**

Industry	Age				Total	% of workforce
	15-19	20-24	25-44	45+		
Agriculture and Fishing	4%	7%	38%	52%	100%	5%
Forestry & Logging	3%	11%	50%	36%	100%	1%
Mining	1%	6%	51%	41%	100%	1%
Food, Beverage and Tobacco Product Manufacturing	9%	10%	47%	34%	100%	3%
Wood & Paper Product Manufacturing	4%	7%	48%	41%	100%	2%
Metal Product Manufacturing	4%	9%	50%	37%	100%	2%
Machinery and Equipment Manufacturing	8%	11%	50%	31%	100%	1%
Other Manufacturing	5%	9%	47%	39%	100%	3%
Electricity, Gas, Water and Waste Services	1%	7%	52%	40%	100%	1%
General Construction	8%	10%	42%	40%	100%	3%
Construction Trade Services	6%	11%	46%	37%	100%	4%
Basic Material Wholesale	4%	7%	45%	43%	100%	1%
Machinery and Motor Vehicle Wholesale	4%	9%	48%	39%	100%	1%
Other Wholesale	5%	10%	47%	38%	100%	2%
Motor Vehicle and Motor Vehical Parts Retailing	7%	14%	45%	35%	100%	1%
Food Retailing	26%	16%	37%	21%	100%	4%
Other Retailing	15%	15%	38%	32%	100%	8%
Accommodation and Food Services	23%	17%	33%	27%	100%	7%
Road Transport	2%	4%	40%	54%	100%	3%
Other Transport, Postal and Warehousing	2%	7%	47%	44%	100%	2%
Information Media and Telecommunications	4%	10%	44%	42%	100%	2%
Financial and Insurance Services	3%	12%	52%	33%	100%	3%
Rental, Hiring and Real Estate Services	5%	11%	39%	45%	100%	1%
Professional, Scientific and Technical Services	3%	10%	45%	42%	100%	4%
Administrative and Support Services	5%	10%	45%	40%	100%	3%
Public Administration and Safety	1%	5%	49%	45%	100%	9%
Education and Training	1%	5%	41%	53%	100%	8%
Health Care and Social Assistance	2%	6%	41%	51%	100%	12%
Arts and Recreation Services	8%	11%	42%	39%	100%	1%
Other Services	8%	12%	42%	38%	100%	4%
<b>Workforce</b>	<b>7%</b>	<b>9%</b>	<b>43%</b>	<b>41%</b>	<b>100%</b>	<b>100%</b>

Source data: ABS 2006 Census

Created by: Strategy Team, Skills Tasmania

With the statistics showing that the workforce is ageing, employers may need innovative strategies for attracting and retaining employees to build and maintain their workforce and to consider retraining and retaining older workers to generate the skills that they need. This data will assist in the analysis of the occupations and industry sectors most likely to be affected and in developing and targeting key actions to help retain and retrain.

**Policy Responses** could include:

- Building the capacity of industries and enterprises to manage their future workforces. This could include:
  - increasing the number of people participating in Tasmanian Government Workforce Development Programs; and
  - increasing the number of people undertaking a Diploma and above qualification

relating to organisational learning, capability development and/or workforce planning.

- Targeting skills investment to prepare and support industries, occupations and localities adversely affected by the ageing of its workforce, or needed to support an ageing population.
- Ensuring appropriate mature-aged and existing workers programs, incentives and initiatives exist, are promoted and are accessible.

## 4. HOURS WORKED

One of the features of the Tasmanian workforce is the significance of both part time work and the numbers of people working long hours.

Table 4.1 shows that part-time work was clearly common for community and personal service workers, clerical and sales workers and labourers. Nearly half the sales workers (46%) and community and personal service workers (43%) worked less than 25 hours and only around one quarter worked 40 hours or more.

Managers, professionals, tradespeople and machinery operators and drivers worked longer hours. However, the proportions of managers and professionals working 49 plus hours per week declined by five percentage points since 2001 (see Table 4.2). The proportion of community and personal service workers working between 1-15 hours per week also declined over the same period.

Note that the statistics support the observable connection between youth work and part-time work. This is consistent with young people combining work and study and particular occupations being used by employers and employees as appropriate for short term employment.

This data may assist in the identification of occupations that currently support flexible working arrangements, such as part-time employment, and occupations where greater flexibility could be encouraged, if appropriate.

### **Policy Responses** could include:

- Building the capacity of industries and enterprises to manage their future workforces, including the possible incorporation of flexible working arrangements, such a variation in hours, to attract and retain workers. This could include:
  - increasing the number of people participating in Tasmanian Government Workforce Development Programs; and
  - increasing the number of people undertaking a Diploma and above qualification relating to organisational learning, capability development and/or workforce planning.

*Notes for Tables 4.1 & 4.2*

*(a) Occupation was coded to the 2006 Australian and New Zealand Standard Classification of Occupations (ANZSCO). This has replaced the 1996 Australian Standard Classification of Occupations (ASCO) Second Edition.*

*(b) Comprises employed persons who did not work any hours during the week prior to Census Night.*

**Table 4.1: Workforce by Occupation(a) and Weekly Hours Worked - 2006**

	None(b)	1-15 hours	16-24 hours	25-34 hours	35-39 hours	40 hours	41-48 hours	49 and over	Total
Managers	4%	5%	5%	6%	11%	18%	14%	37%	100%
Professionals	5%	8%	10%	12%	20%	18%	12%	16%	100%
Technicians & trades workers	3%	6%	5%	7%	22%	28%	14%	15%	100%
Community & personal service workers	5%	20%	18%	19%	14%	10%	7%	8%	100%
Clerical & administrative workers	4%	11%	13%	14%	28%	17%	7%	6%	100%
Sales workers	4%	27%	15%	13%	15%	11%	7%	8%	100%
Machinery operators & drivers	4%	6%	5%	7%	19%	20%	18%	21%	100%
Labourers	5%	21%	12%	13%	17%	16%	8%	8%	100%
<b>Total</b>	5%	12%	10%	11%	19%	18%	11%	15%	100%

Source data: ABS 2006 Census

Created by: Strategy Team, Skills Tasmania

**Table 4.2: Workforce by Occupation(a) and Weekly Hours Worked - percentage point changes from 2001 to 2006**

	None(b)	1-15 hours	16-24 hours	25-34 hours	35-39 hours	40 hours	41-48 hours	49 and over	Total
Managers	1%	-	1%	-	3%	1%	-	-5%	-1%
Professionals	1%	1%	1%	2%	2%	-	-2%	-5%	-
Technicians & trades workers	-	-	-	1%	2%	-1%	-1%	-1%	-
Community & personal service workers	-	-4%	1%	1%	1%	-	1%	1%	1%
Clerical & administrative workers	-	-1%	-	1%	-	-	-	1%	-
Sales workers	-	-1%	1%	1%	-	-1%	-1%	-	-
Machinery operators & drivers	-1%	-2%	-1%	-	1%	-	2%	2%	-
Labourers	-	-2%	-	2%	-	-2%	-	1%	-1%
<b>Total</b>	-	-	-	1%	1%	-	-	-1%	1%

Source data: ABS 2006 Census

Created by: Strategy Team, Skills Tasmania

## 5. TASMANIA'S HIGHLY SKILLED WORKFORCE

In the Australian and New Zealand Standard Classification of Occupations (ANZSCO), skill level is defined as a function of the range and complexity of the set of tasks performed in a particular occupation. The greater the range and complexity of the set of tasks, the greater the skill level of an occupation. Skill level is measured operationally by:

- the level or amount of formal education and training,
- the amount of previous experience in a related occupation, and
- the amount of on-the-job training required to competently perform the set of tasks required for that occupation (ABS, 2006).

ANZSCO attaches occupations to five skill levels:

*Skill Level 1:* Commensurate with a bachelor degree or higher qualification. At least five years of relevant experience may substitute for the formal qualification. In some instances relevant experience and/or on-the-job training may be required in addition to the formal qualification.

*Skill Level 2:* Commensurate with an AQF Associate Degree, Advanced Diploma or Diploma. At least three years of relevant experience may substitute for the formal qualification. In some instances relevant experience and/or on-the-job training may be required in addition to the formal qualification.

*Skill Level 3:* Commensurate with an AQF Certificate IV, or AQF Certificate III including at least two years of on-the-job training. At least three years of relevant experience may substitute for the formal qualifications listed above. In some instances relevant experience and/or on-the-job training may be required in addition to the formal qualification.

*Skill Level 4:* Commensurate with an AQF Certificate II or III. At least one year of relevant experience may substitute for the formal qualifications listed above. In some instances relevant experience may be required in addition to the formal qualification.

*Skill Level 5:* Commensurate with an AQF Certificate I or compulsory secondary education. For some occupations a short period of on-the-job training may be required in addition to or instead of the formal qualification. In some instances, no formal qualification or on-the-job training may be required.

***It should be noted that ANZSCO does not measure the skill level of an individual, rather it refers to the level of skill that is typically required to competently perform the tasks of a particular occupation. Therefore, skill level is an attribute of occupations, not of individuals in the labour force or of particular jobs. It is irrelevant whether a particular individual working in a job in a particular occupation has a certain amount of training or a particular level of competence or not.***

A *Highly Skilled Workforce* is defined as having a skill level of between 1 and 3. It is an essential part of supporting a knowledge-based economy, which is defined as an economy which is 'directly based on the production, distribution and use of knowledge and information' (ABS 2002). Successful modern economies are more knowledge-intensive than ever as jobs for process and manufacturing workers become automated (ABS 2002). Although high-tech industries are

traditionally associated with knowledge economies, all industries can be knowledge intensive, including extractive industries and agricultural products (ABS 2002).

Table 5.1 shows Tasmania’s capacity to support a knowledge-based economy. The table shows that overall 50 per cent of the Tasmanian workforce was working in occupations classified as highly skilled in 2006. This is slightly below the national proportion of 52%.

When examined at the regional level, Greater Hobart-Southern region had just over half (52%) of its population working in an occupation classified as highly skilled. Northern and Mersey Lyell regions had less than half of their population working in an occupation classified as highly skilled, however Northern still had a greater proportion of its population working in an occupation classified as highly skilled over a “low skilled” occupation, unlike Mersey Lyell.

**Table 5.1: Occupational Skill Level - Tasmania & Australia - 2006**

	Skill Level		
	1-3 (high)	4-5 (low)	Across both/ undefined
Tasmania	50%	44%	6%
Australia	52%	40%	8%
<b>Region</b>			
Greater Hobart-Southern	52%	42%	7%
Mersey Lyell	45%	48%	7%
Northern	48%	46%	6%

Source data: ABS 2006 Census

Created by: Strategy Team, Skills Tasmania

### Policy Responses

The quantum and types of skills available within a region determines its capacity to support and attract industries that are economically productive. The qualification level of an individual is a key factor in determining the occupation of that individual.

To increasing the proportion of Tasmania’s workforce classified as working in a highly skilled occupation, key policy responses could include strategies to:

- Increase the proportion of 15-64 year olds with Certificate III and above skills/qualifications to 43% by 2010 and 49% by 2015 (*Tasmania Skills Strategy target*);
- Halve the proportion of Australia’s aged 24-64 years without qualifications at Certificate Level III and above by 2020 (*National Agreement For Skills And Workforce Development target*); and
- Double the number of higher qualification completions (diplomas and advanced diploma) by 2020 (*National Agreement For Skills And Workforce Development target*).

## 6. ENROLLED IN EDUCATION

Table 6.1 looks at people both in the workforce and studying. In 2006, 11 per cent of the workforce undertook some sort of study. Of this group, 40 per cent was in higher education and a third was enrolled in a VET course. Secondary students made up 20 per cent, while six per cent were undertaking some 'other' form of study. 'Other' is described as study undertaken at institutions or establishments that offer educational courses such as industry skills centres, professional or industry associations, equipment/product manufacturer or supplier, and instances where insufficient information was available to determine the type of educational institution (ABS, 2008, p.44).

With closer examination, Table 6.1 shows that one tenth of professionals, which comprised almost 20 per cent of the workforce, undertook study, mainly in higher education. Sales workers comprised ten per cent of the workforce, and of this group 25 per cent were studying, with 11 per cent at secondary school, four per cent in VET and eight per cent at University. Community and personal service workers, which accounted for ten per cent of the workforce, also had a large proportion of its workforce studying, with eight per cent at university, six per cent in VET and three per cent at a secondary institution. When examined in combination with Tables 3.1 and 3.3, the trend of youth working in part-time employment as sales and community and personal service workers becomes quite clear.

**Table 6.1: People in the Workforce in Education or Training - 2006**

	Current Occupation of Employment								
	Managers	Professionals	Technicians and Trades Workers	Community and Personal Service Workers	Clerical and Administrative Workers	Sales Workers	Machinery Operators And Drivers	Labourers	Total
Secondary	-	-	-	3%	-	11%	-	4%	2%
VET	2%	2%	9%	6%	3%	4%	1%	3%	4%
Higher Education	2%	7%	1%	8%	3%	8%	1%	2%	4%
Other	-	1%	-	1%	1%	1%	-	-	1%
Workforce studying	5%	10%	10%	19%	7%	25%	2%	10%	11%
Not studying	95%	90%	90%	81%	93%	75%	98%	90%	89%
Workforce	100%	100%	100%	100%	100%	100%	100%	100%	100%
Proportion of total workforce	13%	18%	15%	10%	14%	10%	7%	12%	100%

Source data: ABS 2006 Census

Created by: Strategy Team, Skills Tasmania

Table 6.2 breaks down the proportion of each occupation by education institution.

As to be expected, there were strong relationships between sales workers, labourers and community and personal service workers and secondary education; technicians and trades workers and VET training; and professionals and higher education. Sales workers also accounted

for one fifth of those undertaking higher education studies, which supports the observation that young people tend to take on or continue with their part-time sales related work while studying at university.

**Table 6.2: People in the Workforce in Education and Training (as proportion of Educational Institution Attending) - 2006**

	Current Occupation of Employment									Proportion of workforce by education type
	Managers	Professionals	Technicians and Trades Workers	Community and Personal Service Workers	Clerical and Administrative Workers	Sales Workers	Machinery Operators And Drivers	Labourers	Total	
Secondary	1%	1%	2%	12%	3%	51%	2%	25%	100%	20%
VET	7%	9%	34%	16%	11%	11%	2%	9%	100%	34%
Higher Education	7%	30%	4%	19%	10%	20%	2%	7%	100%	40%
Other	9%	21%	7%	24%	17%	12%	2%	6%	100%	6%
Total										100%

Source data: ABS 2006 Census

Created by: Strategy Team, Skills Tasmania

Due to the changes from ASCO to ANZSCO, an analysis between 2001 and 2006 is not possible).

This data may be useful for determining occupations:

- where a qualification may be attained in combination with employment (eg through an apprenticeship or traineeship);
- which are more likely to require a qualification prior to entering employment (eg professions);
- where there is opportunity of up-skilling once in employment, including non-accredited training; and
- which are typical of certain age groups, for example young people combining part-time work with study, where the employment is a means of drawing an income rather than a career

### Policy Responses

While 11 per cent of the workforce was undertaking some form of education or training, approximately half of the Tasmanian workforce did not have a post-school qualification at the time of the Census (see Section 7 for further information). Key policy responses could include strategies that contribute to the *Tasmania Skills Strategy* targets:

- increasing the proportion of 15-64 year olds enrolled in education or training to 18.9% by 2010 and 20% by 2015.
- Increasing the proportion of Tasmanians (15-64 years) enrolled in VET (public system) to 14.6% by 2010 and 16% by 2015.

## 7. LEVEL OF EDUCATION

The follow sections focus on level of education by occupation and industry sector at the individual level.

### *By Occupation*

Table 7.1 shows that:

- 48 per cent of the workforce had a Certificate III or above qualification, a six percentage point increase from 2001.
- 18 per cent had a Degree, a two percentage point increase from 2001.
- 22 per cent had a Certificate III or IV, a three percentage point increase from 2001.
- 51 per cent did not have a post-school qualification, with 31 per cent only having achieved year 10 or below (not shown). Despite this high proportion, it is an improvement from 2001, where 55 per cent did not have a post-school qualification.
- 47 per cent of managers had no post qualifications. While not examined within this report, it would be interesting to analyse whether there is a relationship between a Manager's qualification level and their support for or provision of on-the-job training and workforce development.
- Over 75 per cent of labourers and machinery operators and drivers and sales workers did not have a post school qualification. Sales workers also had over 75 per cent of its workforce without a post-school qualification but as Table 6a shows, a significant proportion were still attending a secondary institution at the time.

While 2001 and 2006 totals can be compared, due to the changes from ASCO to ANZSCO, an in-depth analysis between 2001 and 2006 by occupation is not possible.

**Table 7.1: Workforce by Occupation Category and Level of Education, Proportion**

	Level of Education					Total	Proportion of total workforce
	Degree or more	Diploma & Advanced Diploma	Certificate III & IV	Certificate I & II	No post-school qualification		
Managers	19%	11%	23%	0%	47%	100%	13%
Professionals	68%	14%	6%	0%	12%	100%	18%
Technicians and Trades Workers	4%	6%	58%	0%	32%	100%	15%
Community and Personal Service Workers	9%	11%	24%	1%	54%	100%	10%
Clerical and Administrative Workers	10%	9%	16%	1%	65%	100%	14%
Sales Workers	4%	4%	12%	1%	79%	100%	10%
Machinery Operators and Drivers	1%	2%	21%	0%	76%	100%	7%
Labourers	2%	2%	14%	1%	82%	100%	12%
TOTAL	18%	8%	22%	1%	51%	100%	100%
2001 total	16%	7%	19%	3%	55%	100%	100%
Difference between 2001 and 2006	+2	+1	+3	-2	-4	-	-

Source data: ABS 2006 Census

Created by: Strategy Team, Skills Tasmania

Table 7.2 (next page) breaks down the occupations further, allowing us to see in more detail where the education attainment patterns lie:

- While managers had a mix of education attainment levels, the proportion of farmers and farm managers with no post-school qualifications was relatively high at 64 per cent;
- The majority of professional workers held a degree or more, although around a quarter of business, human resources and marketing professionals and ICT professionals were without a post school qualification;
- The majority of Education, Health, Legal, Social and Welfare professionals held a degree or more, indicating the move toward a university-based qualification being the minimum qualification needed to enter these occupations;
- The impact of apprenticeships and traineeships was evident with a large proportion of Technicians and Trade Workers holding Certificate III and IV qualifications. However, Skilled Animal and Horticultural Workers and Textile, Clothing and Related Trade Workers had over 50 per cent of its workforce with no post-school qualification.
- Health and Welfare Support Workers bucked the trend for the Community and Personal Service Workers occupational classification with 70 per cent of its workforce with a Certificate III or higher. The remaining sub-groups within this classification had over half of their workforce without a post-school qualification. For example in 2006, 77 per cent of hospitality workers did not have a post-school qualification. This figure could be high due to the number of secondary school students with part-time work in hospitality;

- Office managers and project administrators had over 50 per cent of its workforce with a post-school qualification, with 21 per cent with a degree or more. Five out of the eight clerical and administrative worker categories had two thirds of their workforce without a post-school qualification;
- Sales assistants and sales support workers had over 80 per cent of their workforce without a post-school qualification. Again, this is likely to be due to a large proportion of its workforce who were still at secondary school or studying at university at the time;
- Approximately one fifth to one quarter of machinery operators and drivers had Certificate III or IV qualifications, however no post-school qualifications dominated; and
- All labour-related classifications, except for construction and mining, had over three quarters of its population without a post-school qualification.

**Table 7.2: Workforce by Occupation and Level of Education - 2006**

	Level of Education					Total	Proportion of total workforce
	Degree or more	Diploma & Advanced Diploma	Certificate III & IV	Certificate I & II	No post-school qualifications		
<b>1 MANAGERS</b>							
Chief Executives, General Managers and Legislators	36%	15%	17%	0%	31%	100%	1%
Farmers and Farm Managers	9%	9%	17%	0%	64%	100%	3%
Specialist Managers	30%	12%	28%	0%	29%	100%	5%
Hospitality, Retail and Service Managers	10%	9%	21%	1%	59%	100%	4%
Not defined	22%	13%	23%	1%	41%	100%	-
<b>2 PROFESSIONALS</b>							
Arts and Media Professionals	40%	11%	8%	0%	41%	100%	1%
Business, Human Resource and Marketing Professionals	45%	17%	11%	0%	27%	100%	3%
Design, Engineering, Science and Transport Professionals	63%	15%	9%	0%	13%	100%	2%
Education Professionals	82%	11%	3%	0%	4%	100%	5%
Health Professionals	78%	15%	4%	0%	4%	100%	4%
ICT Professionals	51%	12%	12%	0%	24%	100%	1%
Legal, Social and Welfare Professionals	75%	11%	4%	0%	10%	100%	1%
Not defined	75%	9%	5%	0%	11%	100%	-
<b>3 TECHNICIANS AND TRADES WORKERS</b>							
Engineering, ICT and Science Technicians	18%	21%	31%	0%	29%	100%	2%
Automotive and Engineering Trades Workers	1%	1%	73%	0%	24%	100%	4%
Construction Trades Workers	1%	1%	65%	0%	33%	100%	3%
Electrotechnology and Telecommunications Trades Workers	2%	6%	66%	0%	26%	100%	2%
Food Trades Workers	3%	2%	50%	1%	44%	100%	2%
Skilled Animal and Horticultural Workers	5%	5%	31%	1%	59%	100%	1%
Hairdressers	1%	1%	81%	0%	17%	100%	1%
Printing Trades Workers	1%	3%	65%	0%	30%	100%	-
Wood Trades Workers	3%	3%	51%	0%	42%	100%	-
Textile, Clothing & Related Trades Workers	2%	7%	37%	1%	53%	100%	-
Other Technicians and Trades Workers	8%	23%	37%	1%	31%	100%	1%
Not defined	4%	9%	58%	2%	27%	100%	-
<b>4 COMMUNITY AND PERSONAL SERVICE WORKERS</b>							
Health and Welfare Support Workers	19%	30%	27%	0%	24%	100%	1%
Carers and Aides	6%	11%	30%	2%	51%	100%	4%
Hospitality Workers	6%	4%	12%	1%	77%	100%	2%
Protective Service Workers	8%	8%	27%	1%	55%	100%	1%
Sports and Personal Service Workers	14%	15%	19%	0%	52%	100%	1%
Not defined	0%	0%	38%	0%	62%	100%	-

**Table 7.2 (cont...): Workforce by Occupation and Level of Education - 2006**

	Level of Education					Total	Proportion of total workforce
	Degree or more	Diploma & Advanced Diploma	Certificate III & IV	Certificate I & II	No post-school qualifications		
<b>5 CLERICAL AND ADMINISTRATIVE WORKERS</b>							
Office Managers and Program Administrators	21%	14%	17%	1%	47%	100%	2%
Personal Assistants and Secretaries	7%	7%	13%	1%	72%	100%	1%
General Clerical Workers	8%	7%	15%	2%	69%	100%	3%
Inquiry Clerks and Receptionists	7%	7%	17%	1%	68%	100%	3%
Numerical Clerks	8%	9%	14%	1%	68%	100%	3%
Clerical and Office Support Workers	8%	7%	16%	1%	68%	100%	1%
Other Clerical and Administrative Workers	13%	9%	18%	0%	59%	100%	2%
Not defined	17%	28%	0%	0%	55%	100%	-
<b>6 SALES WORKERS</b>							
Sales Representatives and Agents	7%	11%	21%	1%	60%	100%	1%
Sales Assistants and Salespersons	4%	3%	10%	1%	83%	100%	7%
Sales Support Workers	5%	4%	8%	1%	82%	100%	1%
Not defined	28%	8%	8%	0%	56%	100%	-
<b>7 MACHINERY OPERATORS AND DRIVERS</b>							
Machine and Stationary Plant Operators	1%	2%	26%	1%	71%	100%	2%
Mobile Plant Operators	0%	1%	18%	1%	80%	100%	1%
Road and Rail Drivers	1%	2%	20%	0%	77%	100%	3%
Storepersons	1%	3%	17%	0%	78%	100%	1%
Not defined	0%	2%	24%	0%	75%	100%	-
<b>8 LABOURERS</b>							
Cleaners and Laundry Workers	1%	2%	9%	1%	87%	100%	3%
Construction and Mining Labourers	1%	2%	25%	0%	72%	100%	1%
Factory Process Workers	2%	1%	12%	1%	83%	100%	3%
Farm, Forestry and Garden Workers	3%	2%	15%	1%	78%	100%	2%
Food Preparation Assistants	2%	2%	7%	1%	88%	100%	2%
Other Labourers	3%	2%	18%	1%	76%	100%	2%
Not defined	1%	1%	18%	2%	79%	100%	-
<b>Total</b>	<b>18%</b>	<b>8%</b>	<b>22%</b>	<b>1%</b>	<b>51%</b>	<b>100%</b>	<b>100%</b>

Source data: ABS 2006 Census

Created by: Strategy Team, Skills Tasmania

### By Industry Sector

When examining the proportion of the Tasmanian workforce within each industry sector with **no post-school qualification** (Table 7.3), it can be seen that eleven out of the nineteen industry sectors, for Tasmania, had at least half of its workforce without a post-school qualification. This compared to only seven out of nineteen industry sectors for Australia. At the regional level, Mersey-Lyell had twelve industry sectors with at least half of its population without a post-school qualification, Northern had ten, while Greater Hobart-Southern was on par with Australia with seven.

As to be expected, Retail Trade and Accommodation and Food Services had around 70 per cent of its workforce without a post-school qualification. This supports the findings of the Table 7.2 above. On the flip side, the following industry sectors had a relatively low proportion of its workforce with no post-school qualifications:

- Education and Training – across all regions of Tasmania;
- Electricity, Gas, Water and Waste Services – particularly in Greater Hobart-Southern; and
- Professional, Scientific and Technical Services – again, particularly in Greater Hobart-Southern.

**Table 7.3: Proportion of Tasmanian Workforce within each Industry Sector with No Post-School Qualification - 2006**

Industry	Region			Tasmania	Australia
	Greater Hobart-Southern	Northern	Mersey-Lyell		
Agriculture, Forestry and Fishing	62%	65%	69%	65%	66%
Mining	41%	47%	52%	50%	39%
Manufacturing	53%	54%	56%	54%	50%
Electricity, Gas, Water and Waste Services	25%	38%	37%	29%	35%
Construction	39%	44%	40%	41%	41%
Wholesale Trade	63%	63%	60%	63%	54%
Retail Trade	70%	72%	72%	71%	67%
Accommodation and Food Services	67%	70%	72%	69%	66%
Transport, Postal and Warehousing	65%	66%	67%	65%	59%
Information Media and Telecommunications	44%	48%	54%	46%	38%
Financial and Insurance Services	49%	54%	53%	51%	39%
Rental, Hiring and Real Estate Services	48%	57%	56%	52%	45%
Professional, Scientific and Technical Services	26%	32%	39%	29%	25%
Administrative and Support Services	57%	57%	58%	58%	52%
Public Administration and Safety	36%	37%	40%	37%	35%
Education and Training	19%	18%	21%	19%	18%
Health Care and Social Assistance	33%	33%	34%	33%	29%
Arts and Recreation Services	48%	55%	59%	51%	48%
Other Services	36%	37%	34%	36%	34%
<b>Total</b>	<b>46%</b>	<b>50%</b>	<b>53%</b>	<b>48%</b>	<b>44%</b>
2001 total	-	-	-	52%	47%
Difference between 2001 and 2006	-	-	-	-3.2%	-3.2%

Source data: ABS 2006 Census

Created by: Strategy Team, Skills Tasmania

Corresponding with the table above is the examination of the Tasmanian workforce that held a post-school qualification. Table 7.4 examines this breakdown by industry sector. It shows that of those with a post-school qualification:

- just under 40 per cent held a degree or more. Education and Training; Professional, Scientific and Technical Services; and Public Administration and Safety had over 50 per cent of its workforce with a degree or more. This is a one per cent increase from 2001.

- Diplomas and Advanced Diplomas accounted for one in six of the Tasmanian workforce with a post-school qualification. Almost a third of the Financial and Insurance Services, and Rental, Hiring and Real Estate Services workforce held an advanced diploma or diploma.
- 44 per cent hold a Certificate III or IV. Ten out of the nineteen industry sectors had over 50 per cent of its workforce with this level of qualification. Construction; Other Services and Manufacturing had over 70 per cent.
- Retail Trade and Accommodation and Food Services had the highest proportion of its workforce with a Certificate I or II qualification, at around 10 per cent.

Tables 7.3 & 7.4 shows that historically there was little need to have a post-school qualification to enter the workforce for many Tasmania's industry sectors. This is slowly changing. From 2001 to 2006 there has been a shift toward higher level qualifications (at least Certificate III).

**Policy Responses** could include strategies to:

- Lower the proportion of the Tasmanian workforce without a post-school qualification (currently between 48-51%), in particular industry sectors and occupations. This would support the Tasmania Skills Strategy target of:
  - Increasing the proportion of 15-64 year olds with Certificate III and above skills/qualifications to 43% by 2010 and 49% by 2015; and
  - Increase the proportion of 15-64 year olds enrolled in education or training to 18.9% by 2010 and 20% by 2015.
- Maximise opportunities for entry into the workforce by supporting the *National Agreement For Skills And Workforce Development* targets of:
  - Halve the proportion of Australia's aged 24-64 years without qualifications at Certificate Level III and above by 2020; and
  - Double the number of higher qualification completions (diplomas and advanced diploma) by 2020.

**Table 7.4: Tasmanian Workforce with a Post-School Qualification: Breakdown by Industry Sector - 2006**

	Post-School Qualification				Total
	Degree or more	Diploma & Advanced Diploma	Certificate III & IV	Certificate I & II	
Agriculture, Forestry and Fishing	24%	21%	51%	4%	100%
Mining	23%	8%	68%	2%	100%
Manufacturing	13%	11%	73%	3%	100%
Electricity, Gas, Water and Waste Services	37%	17%	45%	1%	100%
Construction	5%	6%	89%	1%	100%
Wholesale Trade	15%	15%	65%	5%	100%
Retail Trade	22%	14%	55%	10%	100%
Accommodation and Food Services	21%	15%	55%	9%	100%
Transport, Postal and Warehousing	12%	17%	67%	4%	100%
Information Media and Telecommunications	36%	25%	36%	4%	100%
Financial and Insurance Services	34%	32%	28%	6%	100%
Rental, Hiring and Real Estate Services	22%	29%	43%	6%	100%
Professional, Scientific and Technical Services	66%	16%	16%	2%	100%
Administrative and Support Services	22%	18%	53%	7%	100%
Public Administration and Safety	52%	18%	27%	3%	100%
Education and Training	73%	14%	11%	2%	100%
Health Care and Social Assistance	49%	21%	27%	3%	100%
Arts and Recreation Services	41%	20%	35%	4%	100%
Other Services	14%	11%	74%	2%	100%
<b>Total</b>	<b>37%</b>	<b>16%</b>	<b>44%</b>	<b>4%</b>	<b>100%</b>
<b>2001 total</b>	<b>36%</b>	<b>16%</b>	<b>42%</b>	<b>6%</b>	<b>100%</b>
<b>Difference between 2001 and 2006</b>	<b>+1.0%</b>	<b>+0.2%</b>	<b>+1.4%</b>	<b>-2.5%</b>	

Source data: ABS 2006 Census

Created by: Strategy Team, Skills Tasmania

## 8. FIELD OF STUDY

Tables 8.1, 8.2 and 8.3 draw the connection between the field of study for an achieved qualification and industry sector and occupation of employment.

Table 8.1 shows for each field of study the range of industries people with a qualification within that field work in. At the time of the Census, there were strong relationships between a health and the health industry sector or an education qualification and the education industry sector, and moderate relationships between construction and architecture and building studies, agriculture and agricultural related studies, and accommodation and food services and hospitality studies. After that the relationships were much weaker, indicating a wider spread across industry sectors. Information technology for example was spread across professional, scientific and technical services (19%), public administration and training (17%), education and training (13%), other retail (7%), and accommodation and food services (4%).

Table 8.2 is similar but shows the spread across occupations. Again, skills tended to be spread generally across the listed occupations apart from education, health, natural and physical science studies (which had a significant relationship with professional occupations), and architecture and building studies (which had a significant relationship with technicians and trade workers).

Table 8.3 shows a more detailed breakdown of Table 8.2. Generally the relationships were predictable. Interestingly, almost a quarter of those who studied society and culture were employed as carers and aids. There were no significant changes between 2001 and 2006.

This data enables us to potentially identify:

- Industries or occupations where the demand for specialised or area-specific skills is high (for example, education and health);
- Industries or occupations where the general skills/qualifications are acceptable for employment (for example, education and health);
- industries or occupations that might support short-term employment and well as career employment (for example, hospitality and sales); and
- areas of skills wastage, where qualified workers are not directly using their skills or qualifications for employment in industries aligned with their field of study.

**Policy Responses** could include:

- Targeted skills investment to support qualifications that are of value to:
  - Tasmania's current and emerging industries and occupations;
  - the community; and are directly related to employment outcomes, as determined by an informed assessment.

**Table 8.1: People in the Workforce with Identified Qualifications; Field of Study by Industry Sector - Proportion - 2006**

Industry sector	Field of Study										
	Natural and Physical Sciences	Information Technology	Engineering and Related Technologies	Architecture and Building	Agriculture, Environmental and Related Studies	Health	Education	Management and Commerce	Society and Culture	Creative Arts	Food, Hospitality and Personal Services
Agriculture and Fishing	3%	1%	4%	2%	28%	1%	1%	2%	1%	2%	2%
Forestry & Logging	1%	1%	1%	-	5%	-	-	-	-	-	-
Mining	2%	-	2%	1%	1%	-	-	-	-	-	-
Food, Beverage and Tobacco Product Manufacturing	3%	1%	3%	1%	3%	-	-	2%	1%	1%	5%
Wood & Paper Product Manufacturing	1%	-	3%	4%	3%	-	-	1%	-	-	1%
Metal Product Manufacturing	2%	1%	6%	2%	1%	-	-	1%	-	-	1%
Machinery and Equipment Manufacturing	-	1%	4%	-	-	-	-	1%	-	-	-
Other Manufacturing	3%	2%	8%	5%	2%	-	-	2%	1%	6%	1%
Electricity, Gas, Water and Waste Services	2%	2%	6%	1%	1%	-	-	2%	1%	1%	-
General Construction	1%	1%	3%	25%	2%	-	-	1%	-	1%	1%
Construction Trade Services	-	1%	7%	27%	3%	-	-	1%	-	1%	1%
Basic Material Wholesale	-	1%	1%	1%	3%	-	-	1%	-	-	-
Machinery and Motor Vehicle Wholesale	-	1%	3%	-	-	-	-	1%	-	1%	-
Other Wholesale	1%	1%	1%	1%	2%	-	-	2%	-	1%	3%
Motor Vehicle and Motor Vehical Parts Retailing	-	-	2%	-	-	-	-	1%	-	-	1%
Food Retailing	1%	2%	1%	-	1%	-	-	3%	1%	2%	8%
Other Retailing	3%	7%	4%	3%	4%	4%	2%	8%	3%	11%	6%
Accommodation and Food Services	2%	5%	2%	1%	3%	1%	2%	5%	3%	6%	25%
Road Transport	-	1%	3%	1%	1%	-	-	1%	1%	-	1%
Other Transport, Postal and Warehousing	1%	2%	3%	1%	1%	-	-	3%	1%	1%	2%
Information Media and Telecommunications	1%	3%	2%	-	-	-	1%	2%	3%	10%	1%
Financial and Insurance Services	1%	3%	1%	-	1%	1%	1%	10%	2%	2%	2%
Rental, Hiring and Real Estate Services	1%	1%	1%	1%	1%	-	-	4%	1%	1%	1%
Professional, Scientific and Technical Services	18%	19%	5%	5%	5%	2%	2%	10%	8%	9%	1%
Administrative and Support Services	1%	2%	2%	1%	4%	1%	1%	4%	2%	3%	2%
Public Administration and Safety	15%	17%	6%	6%	11%	13%	5%	14%	19%	7%	3%
Education and Training	22%	13%	2%	2%	6%	3%	74%	6%	12%	15%	3%
Health Care and Social Assistance	10%	4%	2%	2%	2%	67%	5%	7%	33%	7%	7%
Arts and Recreation Services	2%	2%	1%	-	3%	-	1%	2%	2%	6%	2%
Other Services	1%	3%	9%	1%	2%	1%	1%	2%	3%	3%	17%
Inadequately described or not stated	1%	2%	3%	2%	2%	1%	1%	1%	1%	2%	2%
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source data: ABS 2006 Census

Created by: Strategy Team, Skills Tasmania

Notes

1. The following areas have not been included in this table:

- Mixed Field Programs
- Field of study not stated or inadequately described
- Not applicable

The above groups count for 50% of the working age population; with Not Applicable making up 91% of this share

**Table 8.2: Workforce by Broad Occupation Category and Field of Study, Proportion - 2006**

Occupation	Field of Study											
	Natural and Physical Sciences	Information Technology	Engineering and Related Technologies	Architecture and Building	Agriculture, Environmental and Related Studies	Health	Education	Management and Commerce	Society and Culture	Creative Arts	Food, Hospitality and Personal Services	Total Field of Study
Managers	15%	11%	13%	22%	29%	6%	11%	21%	10%	10%	12%	13%
Professionals	55%	41%	12%	6%	18%	70%	72%	21%	33%	40%	3%	18%
Technicians and Trades Workers	11%	19%	46%	50%	19%	2%	1%	3%	4%	11%	39%	15%
Community and Personal Service Workers	4%	5%	3%	3%	3%	14%	8%	6%	34%	9%	15%	10%
Clerical and Administrative Workers	7%	12%	5%	3%	6%	6%	5%	34%	11%	15%	10%	14%
Sales Workers	3%	5%	4%	3%	4%	1%	2%	11%	3%	8%	9%	10%
Machinery Operators and Drivers	1%	2%	9%	6%	6%	-	-	2%	1%	2%	4%	7%
Labourers	3%	6%	8%	7%	15%	1%	1%	3%	3%	5%	10%	13%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Source data: ABS 2006 Census

Created by: Strategy Team, Skills Tasmania

**Table 8.3: Workforce by Detailed Occupation Category and Field of Study, Proportion - 2006**

Occupation	Field of Study											Total Field of Study
	Natural and Physical Sciences	Information Technology	Engineering and Related Technologies	Architecture and Building	Agriculture, Environmental and Related Studies	Health	Education	Management and Commerce	Society and Culture	Creative Arts	Food, Hospitality and Personal Services	
<b>1 MANAGERS</b>												
Chief Executives, General Managers and Legislators	1%	1%	1%	1%	1%	-	1%	2%	1%	1%	-	1%
Farmers and Farm Managers	2%	1%	2%	1%	19%	1%	1%	1%	1%	1%	1%	3%
Specialist Managers	8%	6%	6%	16%	5%	2%	6%	10%	5%	4%	2%	5%
Hospitality, Retail and Service Managers	3%	3%	4%	3%	3%	1%	2%	7%	3%	4%	8%	4%
Not defined	-	-	-	-	1%	-	-	1%	-	-	-	-
<b>2 PROFESSIONALS</b>												
Arts and Media Professionals	1%	1%	-	-	-	-	1%	-	1%	14%	-	1%
Business, Human Resource and Marketing Professionals	4%	4%	1%	1%	2%	1%	2%	17%	7%	4%	1%	3%
Design, Engineering, Science and Transport Professionals	30%	2%	8%	4%	12%	2%	-	1%	1%	8%	-	2%
Education Professionals	11%	4%	1%	1%	2%	1%	66%	1%	5%	11%	1%	5%
Health Professionals	3%	-	-	-	1%	65%	1%	-	1%	1%	-	4%
ICT Professionals	3%	29%	1%	-	-	-	-	1%	1%	-	-	1%
Legal, Social and Welfare Professionals	1%	-	-	-	1%	1%	1%	-	16%	1%	-	1%
Not defined	2%	1%	-	-	-	-	-	-	1%	1%	-	-
<b>3 TECHNICIANS AND TRADES WORKERS</b>												
Engineering, ICT and Science Technicians	9%	11%	5%	5%	3%	1%	-	1%	-	1%	-	2%
Automotive and Engineering Trades Workers	-	1%	24%	1%	1%	-	-	-	-	-	-	4%
Construction Trades Workers	-	-	1%	41%	1%	-	-	-	-	1%	-	3%
Electrotechnology and Telecommunications Trades Workers	-	6%	11%	1%	-	-	-	-	-	2%	-	2%
Food Trades Workers	-	1%	-	-	-	-	-	-	-	1%	22%	2%
Skilled Animal and Horticultural Workers	1%	-	1%	1%	12%	1%	-	-	-	2%	1%	1%
Hairdressers	-	-	-	-	-	-	-	-	-	-	14%	1%
Printing Trades Workers	-	-	1%	-	-	-	-	-	-	1%	-	-
Wood Trades Workers	-	-	1%	-	-	-	-	-	-	-	-	-
Textile, Clothing & Related Trades Workers	-	-	1%	-	-	-	-	-	-	-	-	-
Other Technicians and Trades Workers	-	1%	2%	1%	1%	-	-	-	2%	3%	-	1%
Not defined	-	-	1%	-	-	-	-	-	-	-	-	-

**Table 8.3 (cont...): Workforce by Detailed Occupation Category and Field of Study, Proportion - 2006**

Occupation	Field of Study											Total Field of Study
	Natural and Physical Sciences	Information Technology	Engineering and Related Technologies	Architecture and Building	Agriculture, Environmental and Related Studies	Health	Education	Management and Commerce	Society and Culture	Creative Arts	Food, Hospitality and Personal Services	
<b>4 COMMUNITY AND PERSONAL SERVICE WORKERS</b>												
Health and Welfare Support Workers	1%	-	-	-	1%	7%	1%	1%	5%	1%	-	1%
Carers and Aides	1%	2%	1%	1%	1%	5%	5%	1%	23%	3%	3%	4%
Hospitality Workers	1%	1%	-	-	1%	-	-	1%	1%	3%	8%	2%
Protective Service Workers	1%	-	2%	1%	1%	-	-	1%	3%	1%	1%	1%
Sports and Personal Service Workers	1%	1%	-	-	1%	1%	1%	2%	2%	2%	3%	1%
Not defined												
<b>5 CLERICAL AND ADMINISTRATIVE WORKERS</b>												
Office Managers and Program Administrators	2%	2%	1%	1%	2%	1%	1%	6%	2%	2%	1%	2%
Personal Assistants and Secretaries	-	-	-	-	-	1%	1%	3%	1%	1%	1%	1%
General Clerical Workers	1%	2%	-	-	1%	1%	1%	7%	2%	2%	2%	3%
Inquiry Clerks and Receptionists	1%	3%	1%	-	1%	1%	1%	6%	2%	4%	3%	3%
Numerical Clerks	1%	2%	-	-	1%	1%	1%	7%	1%	2%	2%	3%
Clerical and Office Support Workers	-	1%	1%	1%	1%	-	-	1%	1%	1%	1%	1%
Other Clerical and Administrative Workers	1%	1%	1%	1%	1%	-	1%	3%	2%	2%	1%	2%
Not defined												
<b>6 SALES WORKERS</b>												
Sales Representatives and Agents	1%	-	1%	1%	1%	-	1%	3%	1%	1%	2%	1%
Sales Assistants and Salespersons	2%	3%	2%	2%	3%	1%	1%	6%	2%	6%	6%	7%
Sales Support Workers	-	1%	-	-	-	-	-	1%	1%	1%	1%	1%
Not defined	-	-	-	-	-	-	-	-	-	-	-	-

**Table 8.3 (cont...): Workforce by Detailed Occupation Category and Field of Study, Proportion - 2006**

Occupation	Field of Study											Total Field of Study
	Natural and Physical Sciences	Information Technology	Engineering and Related Technologies	Architecture and Building	Agriculture, Environmental and Related Studies	Health	Education	Management and Commerce	Society and Culture	Creative Arts	Food, Hospitality and Personal Services	
<b>7 MACHINERY OPERATORS AND DRIVERS</b>												
Machine and Stationary Plant Operators	1%	-	3%	2%	2%	-	-	-	-	1%	1%	2%
Mobile Plant Operators	-	-	1%	1%	2%	-	-	-	-	-	1%	1%
Road and Rail Drivers	-	1%	3%	2%	2%	-	-	1%	-	-	2%	3%
Storepersons	-	1%	1%	-	1%	-	-	1%	-	-	1%	1%
Not defined	-	-	-	-	-	-	-	-	-	-	-	-
<b>8 LABOURERS</b>												
Cleaners and Laundry Workers	-	1%	1%	1%	1%	-	-	1%	1%	1%	2%	3%
Construction and Mining Labourers	-	-	1%	3%	1%	-	-	-	-	-	1%	1%
Factory Process Workers	1%	2%	2%	1%	2%	-	-	1%	-	1%	2%	3%
Farm, Forestry and Garden Workers	-	1%	1%	1%	8%	-	-	-	-	1%	1%	2%
Food Preparation Assistants	-	1%	-	-	-	-	-	-	1%	1%	2%	1%
Other Labourers	1%	1%	3%	2%	2%	-	-	1%	1%	1%	1%	2%
Not defined	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total occupation</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Source data: ABS 2006 Census

## 9. NOTES ABOUT THE DATA

- The data used in these analyses are all sourced from data files prepared for Skills Tasmania by the Australian Bureau of Statistics (ABS) from the 2006 Population Census.
- All data tables are copyright 2007 Australian Bureau of Statistics.
- Note that the classifications are based on responses provided by people completing the Census form. This inevitably causes some anomalies, particularly where people describe their occupation. For example, people who describe themselves as chefs, a management classification, may in fact be cooks, a trade classification.
- Note that the following categories have been omitted from the analysis tables:
  - Table 2.1
    - Not stated, and Inadequately described removed.
    - For 2006, 5,199 of 204,739 people (or 2.5% of the Tasmanian workforce) fall into this category. The revised workforce total for Table I is 199,540.
    - For 2001, 4,832 of 182,521 people (or 2.6% of the Tasmanian workforce) fall into this category. The revised workforce total for Table I is 177,689.
  - Note that data for Table I was derived from 2006 ABS Census online data. There is a slight discrepancy between the online census data (204,467) and custom tables (204,739) for the Tasmanian workforce (or *total Tasmanians employed*). Due to the large number of custom tables, 204,739 is the chosen base total.
  - Tables 3.1 & 3.3
    - Not stated, Inadequately described, and Not applicable removed
    - For 2006, 3,033 of 204,739 (or 1.5% of the Tasmanian workforce) fall into these categories. The revised workforce total for Tables 2 and 3 is 201,706.
    - For 2001, 3,819 of 182,521 fall into this category (or 2.1% of the Tasmanian workforce) fall into these categories. The revised workforce total for Tables 2 and 3 is 178,702.
  - Table 3.4
    - Not stated, Inadequately described, Not applicable removed
    - For 2006, 5,199 of 204,739 people (or 2.5% of the Tasmanian workforce) fall into these categories. The revised workforce total for Table I is 199,540.
  - Table 4.1
    - Not stated (number of hours worked) and Inadequately described/ Not stated (occupation) removed
    - For 2006, 7,567 of 204,467 (or 3.7% of the Tasmanian workforce) fall into these categories. The revised workforce total for Table 4.1 is 196,900.
    - Note that data for 4.1 was derived from 2006 ABS Census online data. There is a slight discrepancy between the online census data (204,467) and

custom tables (204,739) for the Tasmanian workforce (or *total Tasmanians employed*). 204,739 is the chosen base total.

- Table 5.1
    - Not stated, Inadequately described removed
    - For 2006, 3,033 of 204,739 (or 1.5% of the Tasmanian workforce) fall into these categories. The revised workforce total for Table 5.1 is 201,706.
  - Tables 6.1 & 6.2
    - Not applicable, Not stated (occupation) removed and Not stated (education institution attending) removed.
    - For 2006, 4,057 of 204,739 (or 2% of the Tasmanian workforce) fall into these categories. The revised total is 200,682.
  - Tables 7.1 & 7.2
    - Certificate not described, No educational attainment, Not adequately described, Not stated (level of education) and Inadequately described/ Not stated (occupation) removed.
    - For 2006, 14,562 of 204,739 (or 7% of the Tasmanian workforce) fall into these categories. The revised total is 190,177.
  - Table 7.4
    - Certificate not described removed. For 2006, the revised total Tasmanian workforce with a post-school qualification was 94,110.
  - Tables 8.1, 8.2 & 8.3
    - Mixed field programmes, Field of study not stated, Field of study inadequately described, Not applicable (Field of study) and Not stated, Inadequately described, Not applicable (Industry) removed
    - For 2006, 103,195 of 204,739 (or 50% of the Tasmanian workforce) fall into these categories. The revised total is 101,544.
- Qualification is recorded as the highest completed qualification, so not all qualifications are recorded.
  - Additionally, in drawing conclusions in relation to the workforce it should be noted that the reported workforce status is relevant to mid 2006.
  - References to “The Workforce” mean the people who described themselves as being in work at the time of the Census, hours worked refers to the week preceding the Census.
  - The terminology used in classifications is that used by the ABS.
  - The data provided here have been classified into broad categories for ease of reading. A great deal of more specific information is available from the data files on specific occupation or industry groupings.
  - Much of the data is presented as percentages rather than absolute numbers. This is done to better present comparative levels and eliminate an unnecessary level of precision required when using absolute numbers.

- Note also that the ABS website has extensive basic tables covering the labour force. Go to <http://www.abs.gov.au/> and follow the links.
- Special tables of Population Census data can be purchased from the ABS. The above web site will also link to the census data dictionary, a list of all the data items collected.
- There is also other Population Census data held within Skills Tasmania, that we can make arrangements for Skills Tasmania staff to access.

## **10. BIBLIOGRAPHY**

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