Government of Tonga

Ministry of Education and Training (MET)
TVET Support Program (TSP)

The Tonga and Regional Labour Market Review 2012: A study to identify the demand for skills training in Tonga

Final

5 March 2013

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Acknowledgements

This labour market review breaks new ground for the kingdom of Tonga. It provides for the first time comprehensive information and extensive analysis of the rôle of middle-level skills in the Tongan labour market and in overseas labour markets where large communities of Tongans reside. It also breaks new ground for the Pacific, as no similar comprehensive review of the labour market for middle-level skills has been undertaken in any other Pacific island country.

Extensive use has been made of the data on occupations from the 2011 national census. These data have provisional status only, pending the official release of the census results. Thanks to The Government Statistician, Mr Ata Ata Finau, and census director, Mr Sione Lolohea, for their approval to use the data and help in accessing it. Mr David Smith, Director, Surveys & Reporting, Economic Analysis Unit, Australian Department of Immigration and Citizenship, kindly responded to a request for data from the 2011 Australian census on Tongans resident in Australia. Ms Karen McGuigan, Director, Migration Modelling and Statistics, Australian Department of Immigration and Citizenship, provided the data on recent Tongan migrants to Australia. Ms Nicola Hogg, General Manager, Visa Services, Immigration New Zealand, also provided valuable feedback on analysis of data on Tongan migrants to New Zealand.

Three special surveys provide the primary data for the review. The Tonga Graduate Tracer Survey 2011 was carried out by the Ministry of Training, Employment, Youth & Sports (MoTEYS). I am grateful to Mrs Fatai Soakai for her help in giving me full access to the data and for providing helpful background information. The surveys of enterprise skills and income earners in the informal economy were funded by the TVET Support Program (TSP) and were carried out under the supervision of Dr Masasso Paunga (USP), a consultant engaged for the review. He received support from Mr Siaosi Enosi (TSP), Ms Luseane Aho (TSP), Ms Kepreen Ve'etutu (TSP), MET staff members, the USP staff who were responsible for data entry, Ms Mele Vunipola (MCTL), Ms Tangini Tuifua (MCTL). Mr Eric Jurmo offered his services as an intern and gave valuable assistance by coding and preparing the results of the informal economy survey for further analysis. Ms Luseane Aho (TSP) also provided valuable help by collecting and coding the job advertisements from three newspapers for three months, and compiling available data on TVET enrolments and graduates. She also presented the results of the Graduate Tracer Survey to TVET providers and got feedback about the relevance of the results to their institutions.

Mr Geoff Penhall, the team leader for the TVET Support Program (TSP), took a major part in the design of the survey of the informal economy, conducted a number of interviews and developed a template for analysing the results. He also made sure that all available resources were allocated to meet the demanding workload that these surveys involved. He has also worked hard to ensure that all available data were identified and made use of where possible. Thanks also to the participants to the two presentations on 19 and 21 February who provided feedback through the evaluation forms, highlighting the issues they thought were important and saying where they wanted information. A special thanks also to Peter Morris for his comments on the report.

Richard Curtain
Short-term Adviser, Tonga labour market Study
26 February 2013

Abbreviations

ICT	Information & communication technology
ILO	International Labour Organisation
ISCO	International Standard Classification of Occupations
IT	Information technology
LAME/AME	Licensed aircraft maintenance engineer/Aircraft Maintenance Engineer
MCTL	Ministry of Commerce, Tourism & Labour
MET	Ministry of Education and Training (MET)
MLECCNR	Ministry of Land, Environment, Climate Change and Natural Resources
MoTEYS	Ministry of Training, Employment, Youth & Sports
NZ	New Zealand
OECD	Organisation for Economic Cooperation and Development
PUMA	Planning and Urban Management Agency
STAT	Standardised Test Of Achievement Tonga
TOP	Tongan Pa'anga
TSP	TVET Support Program
TVET	Technical and vocational education and training
UNITEC	Unitec Institute of Technology, Auckland, New Zealand

Executive summary

Key questions

How big is the labour market for middle-level skills in Tonga (defined as skills recognised by qualifications below a degree)? Does Tonga have enough jobs requiring middle-level skills to justify the Government's and community's investment in technical and vocational education and training (TVET)? How important are middle-skill jobs for skilled migrant entry to Australia and New Zealand? Is this large investment in TVET cost-effective? How do TVET graduates fare in terms of employment outcomes in Tonga and in labour markets overseas?

Report focus

This report provides information on the current supply and demand for middle-level skills in Tonga and in three countries where large communities of the Tongan diaspora live and work. It also identifies, where possible, the future need for middle-level skills in Tonga and in the major overseas destinations for Tongans. The report breaks new ground for Tonga, in terms of understanding the labour market for middle skills. It also gives Tonga the opportunity to take the lead ahead of other Pacific countries in matching skills to jobs.

Audiences for the report

The audiences for this report are several. They include include the Government of Tonga, churches, donors, students and parents because they fund TVET. Enterprises too are a key audience because they are seeking the skills TVET provides. The report also speaks to the needs of Tongans in the informal economy.

Pressures for change to deliver better skills outcomes

A range of push and pull factors are pressuring the Government and TVET providers to make more effective use of skills. The youth bulge in the population is a leading push factor. Larger numbers of young people are reaching age 18 each year. Linked to this is the growing number of young people with higher levels of formal education and the high expectations about paid work that go with that.

Government, in a new age of austerity, has to make hard decisions about how to get better value from the services it funds. Also, Tongan faith-based communities and households, no longer able to expect the same level of remittances as in past years, have to work out how to get better TVET results with fewer resources.

Another source of pressure for change is the pull of well-paid jobs overseas. Tongan migration to these countries in the past has been largely family-driven with a relatively low proportion of migrants getting skilled jobs in the USA, New Zealand and Australia. Two of these countries now increasingly demanding recognised skills as the basis for migrant entry. This means an increased need for TVET providers in Tonga to provide internationally recognised skills. Also required of skilled migrants is relevant work experience and work skills based on the requirements of high-performance workplaces.

The demand for different and higher quality skills training also comes with new technology and new ways of working. Finally, new emerging industries are demanding new sets of skills. The demand for new 'green skills' to operate and maintain the new forms of renewable energy generation is a good example.

Framework for the report

The report uses a simple framework based on the supply of and demand for skills. The overview discusses the changes in occupations between 2006 and 2011, and makes use of the results of 2011 census to identify middle-level occupations relevant to Tonga. Attention is also given to the share of job holders with post-school qualifications. Information is also presented on the providers by type of qualification and field of study, the number of students they are training and the graduates they have produced, where the data are available.

It is estimated that in 2012, some 2,300 young people left secondary school at Form 5 and above. The number of job vacancies is estimated to be between 180 and 300 a year.

Differing employment outcomes for TVET graduates

Information on the employment outcomes of TVET graduates in twelve skill areas or industries is presented and discussed. Three types of employment outcomes are evident. Graduates in nursing and in teaching have good employment rates, varying from 90 to near to 100 per cent. The employment rates for TVET graduates in fields of study as accounting and business studies are also reasonably high, about 70 to 75 per cent.

However, several fields of study have weak employment outcomes. This applies especially to Certificate in Information Technology where only one-in-five graduates are in paid work. The employment rate for the diploma graduates of information technology is better at near to two-in-three in jobs but still below expectations. The certificate holders in secretarial studies also find it hard to get paid work. Only one-in-three is employed, with half of these graduates looking for work.

Two qualifications aimed at employers in tourism & hospitality have weak employment outcomes as well. Less than half of the certificate holders in cooking and hospitality are in paid work and over half are looking for work. The same picture holds for the diploma graduates in tourism & management with half employed and half of the graduates looking for work. The employment outcomes of graduates with maritime qualifications are also weak with between a third and a half of these graduates looking for work. Possible reasons for these different outcomes are discussed in the report.

Types of skills sought by employers

Nine out-of-ten employers in the formal sector have been surveyed for this report. Over half of all employers surveyed said it was hard or very hard for them to recruit workers with the skills they need. Employers also identified skills gaps in their existing workers, with only a third of employers able to say that all their workers have the skills to do their job. Employers often identified their need for skills as broader than the technical skills associated with TVET provision. They wanted a foundation of basic literacy & numeracy and English language skills. Also important are a range of social or behavioural skills.

Needs of the informal economy

More people in Tonga earn an income from the informal economy than the formal economy. However, most countries only fund skills training to prepare people for work in the formal economy. Providing training for the informal economy suffers from a number of challenges. One is the lack of adequate resources allocated to supporting activities in the informal economy. Another is the lack of suitable trainers. Another challenge is the low literacy and numeracy of many of those making a living in the informal economy. The results of a special survey of Tongans seeking better ways to generate a reliable livelihood are reported.

Forecasting future demand for middle-level skills

In an economy where the private sector services the needs of a small domestic market and a tourist trade with variable demand, government and donor priorities for infrastructure investment provide the best guide to the future demand for skills. Current and future proposed large projects require skills over and above the normal requirements of a low-growth economy. However, it is not possible to apply a set template to work out the domestic skill needs of a specific project. These will depend, among other factors, on the opportunities enterprises provide for skills transfer to the domestic workforce.

Future opportunities for skills formation may also require a change in government policy to maximise the skills transfer opportunities. One way for the government to do this is to stipulate in a request for tenders that opportunities for skills transfer be provided such as the employment of apprentices. Government can also specify the ‘green jobs’ and competencies needed to implement its policy statements on renewable energy and responses to climate change.

Opportunities for Tongans in Australia, New Zealand and USA

Tongans have a strong migrant presence in three countries: New Zealand, Australia and the USA. The report presents detailed information on the job profiles of Tongans in New Zealand, and Australia. The report also highlights the changing nature of the skills migration polices of Australia and New Zealand and presents information on the types of skills expected of migrants to these countries. For the USA, more general data are available on the jobs held by Pacific Islanders, a group which includes the 57,000 Tongans.

The main conclusion is that migrants need higher levels of education to obtain secure work in the main overseas destinations for Tongans. The shift to employer demand-led immigration in Australia and New Zealand means authorities are placing greater emphasis on meeting employer requests for recognised skills matched to job requirements. In the USA, the demand for nurses is also emphasising the importance of having a degree geared to US requirements.

Indicators of capacity

A key issue in developing appropriate indicators is to know for whom they are intended. The report discusses three approaches to the use of indicators of labour market capacity. A number of indicators are proposed which cover the supply of skills, the demand for skills and skills matching.

Chapter One: Overview of the Tongan labour market

The state of the economy and prospects for the future

Tonga has a small, open, island-based economy of just over 100,000 people. The services sector dominates, contributing 63 per cent of Gross Domestic Product (GDP). Agriculture contributes 20 per cent, and the industrial sector accounts for 17 per cent of GDP. The services sector accounts for the remainder of the economy. The country is dependent on external aid and remittances from Tongan communities overseas to offset its trade deficit.[1]

Tourism is the second-largest source of hard currency earnings followed by remittances, agricultural exports, including fish, make up two-thirds of total exports. Squash, coconuts, bananas, yams, watermelons and vanilla beans are important crops. The country imports a high proportion of its food, mainly from New Zealand.

Tonga is said to have a reasonably sound basic infrastructure and well-developed social services. However, there is high unemployment among young people, a continuing upturn in inflation, and rising civil service expenditures. The government wants to develop the private sector more through foreign investment and has committed increased funds for health and education.[2]

Current economic conditions

Tonga, as an open economy, has been affected by the global recession with declines in tourism, remittances, and exports. Financial conditions remained tight as banks raised lending standards following a large rise in non-performing loans. In 2011, growth in the economy was achieved by a recovery in tourism and expansionary fiscal policy financed by donor aid.[3]

However, Tonga's economy grew by only 1.3 per cent in the financial year to end June 2012, down from 4.7 per cent in the previous year.[4] Growth for the current financial year is projected to fall slightly to 1 per cent as infrastructure projects are completed. Capital expenditure by the Government of Tonga fell by half in the financial year 2011-2012. This was due to the winding down of donor-funded construction projects. The Government extended its freeze on filling civil service positions to the end of 2012 in an effort to reduce its wages bill.[5] Private sector credit continues to decline. Lending to businesses fell by 19 per cent in July 2012. Remittances, which are equivalent to around 30 per cent of GDP, continued a prolonged decline by 23 per cent financial year 2011-2012.[6] Tourism receipts fell by 8 per cent for the year, despite slightly increased numbers, because of shorter stays and price discounting.

The World Bank's end of 2012 assessment notes that the Government of Tonga faces major economic challenges. This is due to 'sluggish growth prospects, weak revenue performance,

[1] https://www.cia.gov/library/publications/the-world-factbook/geos/tn.html

[2] https://www.cia.gov/library/publications/the-world-factbook/geos/tn.html

[3] IMF, 2011, Tonga: IMF Country Report No.11/110, International Monetary Fund, Is hington DC, p 3.

[4] World Bank, 2012, East Asia and Pacific Economic Update December 2012, Volume 2, p 92.

[5] Tonga: ADB Pacific Economic Monitor December 2012, p 14 www.adb.org/pacmonitor

[6] Tonga: ADB Pacific Economic Monitor December 2012, p 14 www.adb.org/pacmonitor

possible permanent declines in remittances, and growing debt-repayment obligations'.[7] This assessment has been confirmed by the Governor of the National Reserve Bank of Tonga who noted on 4 February 2013. She stated in an address to the Tongan Chamber of Commerce & Industry that falling exports and remittances, along with other struggling sectors, have weakened Tonga's economy. The global financial crisis has resulted in a 'steep and continuous decline' of cash remittances to Tonga since 2008. Tonga received about US$13 million less in remittances in 2012.[8] Real GDP growth is also projected to slow down. Tonga's public debt has risen by TOP$172 million [US$99.5 million] in four years.[9]

Outlook for the future

The International Monetary Fund undertook a detailed assessment of the state of the economy in March 2011. Its assessment noted that:

> *Over the medium term, growth is expected to remain at around 1¾ per cent- in line with the average of the past 15 years but about ¾ per centage points above the average of the past 10 years. This medium-term outlook assumes implementation of the government's plans, including stepped up capital spending, structural reform, improved fiscal management to support fiscal consolidation, as well as continued high emigration. Growth is expected to be mainly driven by tourism and agriculture, consistent with medium-term development priorities.*[10]

This information suggests that domestic jobs growth in the future will be slow in both the public and private sectors. The main source of new jobs will be from government and donor investment in infrastructure projects. Emigration will remain an important outlet for Tongans seeking paid work, especially for those with internationally recognised skills.

The jobs challenge facing Pacific island countries

The jobs challenge facing Tonga is best summarised by the World Bank's profile of small island nations in its World Development Report 2013 on Jobs.[11] According to the World Bank, small island nations, especially in the Pacific, are unable to reap the benefits from a concentration of businesses and skills available to large economies because of their size. Remoteness from the main trade routes and the high cost of transport also means they cannot benefit from being close to high-income markets except through tourism. Employment opportunities are limited apart from working for government and in providing basic services.[12] However, the World Bank emphasises that for these countries outmigration is a major way people can improve their living standards. Also return migration and overseas communities

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[7] World Bank, 2012, East Asia and Pacific Economic Update December 2012, Volume 2, p 92

[8] 'Bank Governor: Tongan Economy Continues To Weaken: GDP projected to slow, overseas remittances in sharp decline'. Pacific Islands Report, www.pireport.org

[9] See Note 8

[10] IMF, 2011, Tonga: IMF Country Report No.11/110, International Monetary Fund, Washington DC, p 5.

[11] World Bank 2012, 'Overview: Moving Jobs to Center Stage', World Development Report 2013: Jobs, Washington DC; p 19.

[12] Only three out of the 78 job advertisements in a three-month period in Tonga 2012 were from the private sector. Nearly three-in-four job advertisements (72 per cent) were for positions funded by government or public enterprises. The remainder were for jobs in non-government organisations or in regional organisations.

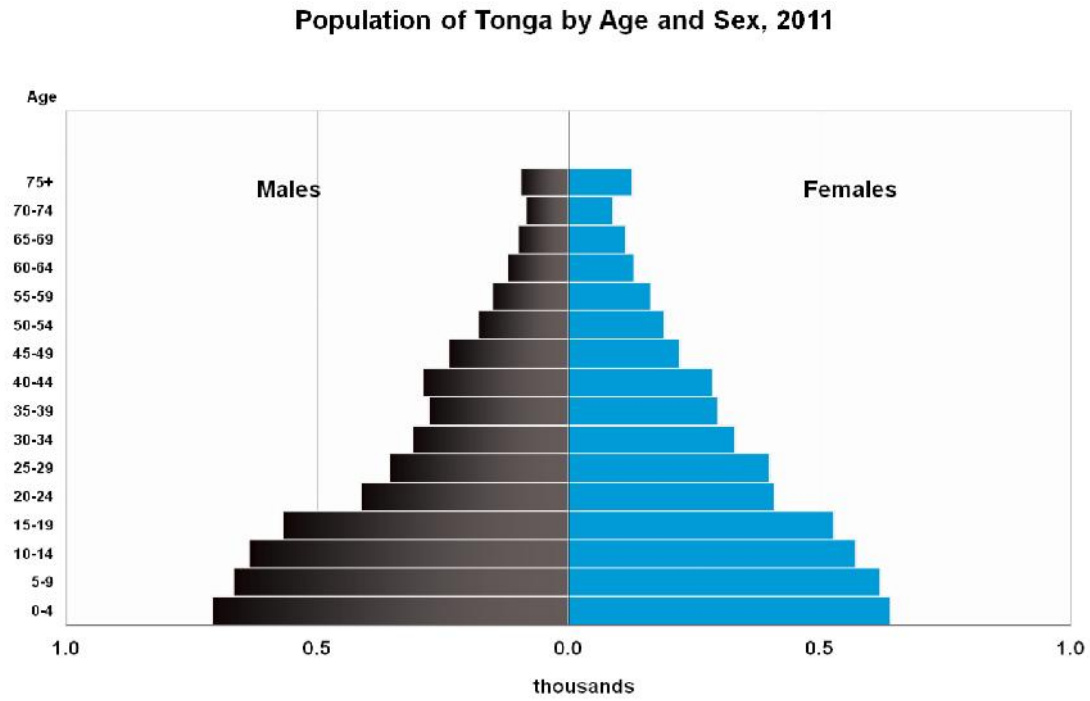
through remittances can boost business opportunities in the domestic economy.[13]

Changes in the population profile

The population of Tonga between 2006 and 2011 increased by 1,045, an increase of 1 per cent, with an annual rate of 0.02 per cent. Applying a higher annual population growth rate to the 2006 population count gives an estimate of the number of people who are likely to have left Tonga between 2006 and 2011. If an annual compound growth rate of 2.3 is used[14], the population in Tonga in 2011 would have been 114,272, a difference of 11,236 compared with actual count of 103,036. About 10,000 Tongans have emigrated since 2006.

Youth bulge and what it means for the demand for jobs

Tonga has a youth bulge in its population as the age pyramid below shows, with more young people on the way. The best measure of a youth bulge is the share of young people in the adult working population. This shows the competition for jobs. A third of the adult working age population in 2011 are young people aged 15-24 years.[15]



Source: Provisional data from Tonga National Population and Housing Census 2011

[13] See Note 11

[14] An annual growth rate based on the Melanesian countries is used to estimate the possible size of the Tongan population without emigration as these countries have much lower emigration rates. The SPC records an annual growth rate of 2.1 for Papua new Guinea, 2.7 for Solomon Islands and 2.6 for Vanuatu.

[15] These data are based on United Nations Population Division estimates from its World Population Prospects: The 2010 Revision. The estimated total population in 2010 is 104,000 which is close to the census total of 103,036. The projected population figures, therefore, are based on past emigration rates. The adult working age population is defined as 15-59 years.

In actual numbers, young people in this age group now number an estimated 19,000. The youth share in the working age population is projected to reach 36 per cent in 2015, 38 per cent in 2020 and will fall slightly to 37 per cent by 2025 and return to a third share in 2030. In terms of actual numbers of young people entering the labour force, their numbers will increase from the current level of 19,000 to 22,000 in 2015, 24,000 in 2020, 25,000 in 2025 and will fall off to 24,000 in 2030. These UN projections assume past rates of emigration will continue.

These increased numbers of young people put pressure on Tonga's economy is to provide more jobs in the domestic economy than it is doing now. If the current rate of employment is applied to the working age population in the future, the economy will have to create over 1,100 additional jobs by 2015 and 1,700 by 2020 to keep the same rate of employment as now. Alternatively, young people need clear pathways to skilled work overseas.

Data presented in Chapter 2 below show that altogether some 2,300 young people entered the labour market in 2012 after leaving secondary school with Form 5 or above. Other data on job advertisements show that an estimated 180 to 190 jobs were advertised in August to end of October 2012 that required less than a degree. Employers in the enterprise survey said they had 118 job vacancies in November 2012 although there may be a hiring delay imposed on positions funded by the government budget. It is not known what the extent of the overlap is between these vacancies and the advertised jobs. So the range of available jobs in a year is likely to be between 180 and 310. Nevertheless, the gap between the number of young people with formal education and the number of available jobs in the formal sector is large.

The occupation profile of Tonga in 2011

Tonga has a total population of 103,036 on 30 November 2011, according to the preliminary results of the Tonga National Population and Housing Census 2011. This figure is an increase of 1,045 people only since 2006, a growth rate of 1 per cent over the five year period or 0.2 per cent annual growth rate. However, the changes in the occupations of Tongans between 2006 and 2011 are much more marked.

The 2011 national census for Tonga provides the most comprehensive source of information on the occupations of Tongans aged 15 years and over. The following broad occupational groupings are based on the International Standard Classification of Occupations (ISCO). Slightly less than a third of the population is employed. This means working for pay, producing goods mainly for sale, or working to support a household by producing goods mainly for their own consumption.

The census identifies three broad types of employment. The first type is based on jobs in the formal economy. The second type of employment is based on work in the informal economy. The third type of employment is based on producing goods mainly for household consumption. The jobs in the formal economy are usually for pay and the employer is a registered business. Work for the informal economy usually involves an individual or a household producing goods or services mainly for sale. Work based on mainly producing food to subsist has little engagement with the cash economy.

According to the census, the formal economy accounts for 16,183 or near to half of those aged 15 years and over in work (Table A1.1 in the annex to this chapter). One third of those in employment are in the informal economy. Over one-in-six (17 per cent) are subsistence

farmers, fishers, hunters & gatherers

Importance of middle-level skills

Middle-skill jobs are those that generally require some formal education and training beyond secondary school. Middle-skill jobs combine theoretical and practice knowledge to make effective use of technology and apply systematic ways of working. These post-secondary education or training requirements can include formal credentials such as vocational certificates and diplomas but less than a bachelor's degree at a post-secondary TVET provider. They also include significant on-the-job training, and often require previous work experience.[16]

The number of middle-skill job holders in Tonga in 2011 is 5,691 (see Table A1.3). This number represented just over a third (35 per cent) of all jobs in the formal economy.

These middle-skill jobs in the formal economy include the following areas of work at the associate professional and technician level: science & engineering, health business & administration, legal social cultural & related and information & communications. In relation to clerical work, the jobs are not industry specific, covering general clerical work, customer service, record keeping and secretarial work. At the craft or trades level of skill, the work is industry specific covering: building & related work; metal machinery & related work; electrical & electronic work; and food processing, wood working, garment & other craft & related work.

Important occupations for the Tongan economy at the associate professional and technician level include: Draughtspersons, Construction supervisors, Ships' engineers, Ships' deck officers, Medical technicians, Community health workers, Administrative and executive secretaries, Chefs, Information technology technicians, and Telecommunications technicians. Given the specific nature of the skills these jobs require, middle-skill occupations offer well-paid jobs for the workers who fill them.

Middle level occupations and skills in demand in Tonga in 2012

How important are middle-level occupations and skills in the Tongan economy in 2012? A survey of all job advertisements in three major newspapers over three months August to end of October 2012 offers some useful insights (see Annex 1.2 for a discussion of the results of the survey). The importance of post-school qualifications in Tonga's labour market is shown by the required or inferred education qualifications based on information provided in the job advertisements. Over three quarters of the 78 advertised jobs (77 per cent) required a post-school qualification.

Of the total of 78 occupations in which jobs were advertised, one-in-four (26 per cent) were at the technician and associate professional level. Eleven of the jobs in these 20 occupations required a post-school qualification. Of the nine clerical positions advertised, four also required a post-school qualification.

At the top of the required levels of education are degrees or higher qualifications. They were

[16] What are middle-skill jobs? In Harry J. Holzer & Robert I. Lerman, 2009, The Future of Middle-Skill Jobs. CCF Brief # 41, Center on Children and Families, Brookings Institution, Is hington DC, p 1.

required for two-in-five (41 per cent) of the advertised jobs. One-in-ten positions (9 per cent) required a nursing diploma or higher. Over one-in-four (27 per cent) jobs required a sub-degree post-school qualification other than a nursing qualification. Altogether over a third (36 per cent) of all jobs advertised required a post-school qualification below a degree. Only a small share of jobs are directed at secondary school leavers. Just over one-in-ten (13 per cent) of advertised jobs required a secondary school leaving certificate.

Occupational profile in 2011

Four main occupations groups are the focus of this review due to the rôle that TVET does or could play in their skills acquisition process. They are: Technicians & Associate Professionals; Clerical workers; Service workers, Shop & Market Sales Workers, and Craft & Trades Workers. Plant and machine operators are excluded because their skills are learnt on-the-job, through learning by doing or more formally through in-house training. The training needs of Skilled Agricultural & Fishery Workers are addressed in a separate chapter.

Table A1.3 provides a more detailed listing of occupations at the two-digit ISCO level. The traditional focus of technical and vocational education and training in Tonga has been on training people for the associate professionals/technician occupations, and less so for clerical work and for trade skills. Some training has been provided for work in agriculture and little or no training for personal service work. Handicraft workers and market-oriented agriculture and fishing workers are considered part of the informal economy and as such, require training arrangements that suit the different conditions in that economy.

Occupation change between 2006 & 2011

Tables A1.4 & A1.5 show which broad occupation groups have increased or decreased between 2006 and 2011. This is despite an overall fall in the number of people in employment. The two top occupational groups (Legislators, Senior Officials & Managers, and Professionals) have increased their numbers by 380 and 927 respectively. The largest increase of 54 per cent is for Legislators, Senior Officials & Managers, followed by Professionals (31 per cent). Service Workers and Shop & Market Sales Workers have increased by 368 or 12 per cent (see Table A1.5).

However, the number of jobs requiring middle-level skills has fallen over the five years to 2011. The numbers of Technicians & Associate Professionals have decreased by 419 or 21 per cent. Skilled Agricultural & Fishery Workers have decreased by 798 or 8 per cent. Craft & Trades Workers have decreased by 1,982 or 17 per cent. This follows a trend noted in many other countries. It has been called the hollowing out of middle-skilled jobs in favour of a growth in both high skilled and low skilled work.

Occupational trends over time

A closer look at the occupations within each broader grouping shows considerable change is taking place. Science & engineering associate professionals have decreased their number, health associate professionals have remained about the same and information & communications technicians have increased in importance. In relation to clerical work, customer services clerks have become less important over time while the ability to work with numerical data has become important. The number of jobs in both personal and protective services as well as sales has increased.

These trends noted for Tonga also reflect a pattern identified over a thirty-year period for the USA and confirmed by recent evidence from 16 European countries and Australia.[17] As noted above, the pattern in most countries has been for jobs to grow at both ends of the skills spectrum with a decrease in middle-level skills. This is confirmed by a recent analysis of occupational change in 16 European countries over the period 1993-2006. This analysis shows rising employment shares for high-paid professionals and managers as well as for low-paid personal services workers. However, the employment shares of manufacturing and routine office workers have fallen.[18]

Job skills in demand

The US research covering the period 1969 to 1999 has shown that jobs based on 'expert thinking' and 'complex communication' skills have grown the most. 'Expert thinking' refers to the capacity to solve new problems for which there are no routine solutions. 'Complex communication' refers to the capacity to observe, listen, connect with, persuade and negotiate. These problem-solving or communication skills are required not only within the professions and by managers. They are also important in the trade and service occupations.

Job skills in decline

In contrast, jobs based on routine thinking tasks are in decline. Since the beginning of the 1980s in the USA, jobs involving basic, repetitive thinking tasks have fallen the most sharply of all jobs. This trend indicates that jobs which apply routine rules or procedures are under severe threat because they can be replaced by software. Alternatively, they can be performed at lower cost in a central location such as call centres in India or the Philippines.

As consumers can themselves now perform routine tasks such as withdrawing money from a machine, many clerical jobs such as bank tellers are no longer needed. Many other examples exist of how face-to-face customer service gives way to consumer-driven use of technology to carry out routine tasks. The new skills required now are more specialised and are limited to a smaller number of more highly skilled people who have to problem solve when the technology fails.

Low-skilled jobs are also growing

Jobs performing routine manual tasks are also under threat because they can be replaced by machines or by redesigned work. However, jobs that require carrying out non-routine physical tasks show a different trend. The work done by sales workers, housekeepers, hotel staff and caterers, personal care workers such as nursing aids, security guards, hairdressers, truck drivers and cleaners will remain essential. This is because these jobs require the ability to recognise and respond to changing situations and differing personal needs. The constant changes to these tasks mean that only humans have the capacity to bring together the different types of information needed to respond.

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[17] See Levy, F and Murnane, R; 2004, The New Division of Labor: How Computers are Creating the New Job Market. Princeton University Press, Princeton and Oxford; Goos, M, Manning, A & Salomons, 2010, 'Explaining Job Polarisation in Europe: The Roles of Technology, Globalisation and Institutions', CEP Discussion Paper No 1026, November , Centre for Economic Performance, London School of Economics; and Kelly, R and Lewis, P; 2010, 'The change in Labour Skills in the Australia over the Business Cycle', Australian Bulletin of Labour, Vol 36, No 3, pp 260-277.

[18] Goos, M, Manning, A & Salomons, A; 2010, p 42.

Implications

The implications for this review are that clerical support jobs based on simple, routine tasks will continue to decline because computers are becoming more capable of performing this work. However, jobs based on problem-solving and high-level communication skills will grow the most. Also increasing will be low-skilled service jobs because they are responding to changing personal needs and situations.

The number of middle-skill jobs in Tonga has declined between 2006 and 2011. However, these middle-skill jobs still account for just over a third of all jobs in the formal economy. Some middle-skill jobs will expand in the future due to their link to new technology. Other job vacancies in middle occupations will come from normal job turnover. Many job holders in middle occupations will also need to upgrade their skills to enable them to perform the work expected of them.

Opportunities for work in high-income labour markets will follow the same pattern. The need to have recognised skills is a key selection criterion in the immigration entry requirements of New Zealand and Australia. However, without post-school qualifications and relevant work experience, it will be difficult for emigrants to enter the technician/associate professional occupations. Recognised middle-level skills in areas of demand are the best option for entry.

However, service-based work will also be a major source of employment in overseas labour markets. The largest occupations of Tongan women in Australia in 2011, after nursing, are 'nursing support & personal care worker's and 'aged & disabled carers'. For Tongan men, their largest occupations in Australia in 2011 are 'forklift drivers', 'storepersons' and 'security officers & guards'. These service jobs are increasingly require some level of post-school formal training.

Conclusion

This overview has highlighted the specific economic conditions affecting Tonga against the background of a broader set of constraints caused by being a small island country in the Pacific. Despite little formal sector jobs growth between 2006 and 2011, major differences in the growth and decline of broad occupational groups were noted. These changes reflect a deeper set of changes in the skills needed in the labour market due to the widespread use of computers and the adoption of new ways of organising work.

The next chapter presents available evidence on the supply of skills and the employment outcomes of post-secondary graduates. Chapter Three discusses the available information on the domestic demand for middle-level skills, drawing in particular on the results of a special survey of enterprises conduced for this review. Chapter Four presents the results of a study of the income-earning opportunities in the informal economy and the rôle of training in improving these opportunities. Attention is also given to the situation of women as income earners in the informal and formal economy. Chapter Five presents information from the enterprise survey about recent areas of jobs growth and prospects for job growth in the next three months from the date of the survey in November 2012. The chapter then focuses on proposed priorities for infrastructure investment and the implications for skills. Also addressed are the skill needs of the maritime sector in Tonga and overseas.

Chapter Six discusses the jobs profile of Tongan migrants in New Zealand, Australia and the

USA. Also discussed are the relevant middle skills-in-demand profiles of the immigration authorities of New Zealand and Australia. As well, skills and qualification trends for migrants in the USA are also discussed, with particular reference to nursing.

The review ends with Chapter Seven. This chapter discusses the different approaches to the use of indicators in the Tongan labour market and proposes a specific set of indicators on skills supply, demand and skills match.

Annex 1.1

Table A1.1: Employment by whether in formal, informal or subsistence economy, civilian population employed 15 years and over, national census of Tonga 2011, numbers in each group & per cent

Type of economy	N	per cent
Formal	16,183	49.1
Informal	11,171	33.9
Subsistence	5,623	17.1
	32,977	100.0

Table A1.2: Broad occupational groupings, civilian population employed 15 years and over, national census of Tonga 2011, numbers in each group & per cent, occupations in bold refer to the middle skilled occupations

Broad ISCO occupation groups	2011	
	N	Per cent
1 Legislators, Senior Officials & Managers	1,079	3.3
2 Professionals	3,881	11.8
3 Technicians & Associate Professionals	**1,588**	**4.8**
4 Clerks	**1,765**	**5.4**
5 Service, Shop & Market Sales Workers	**3,380**	**10.2**
6 Skilled Agricultural & Fishery Workers	**9,470**	**28.7**
7 Craft Etc Trades Workers	**9,662**	**29.3**
8 Plant, Machine Operators & Assemblers	908	2.8
9 Elementary Occupations	1,244	3.8
	32,977	100.0

Table A1.3: Five occupational groups at the two-digit level, civilian population employed 15 years and over, national census of Tonga 2011, numbers in each occupation group, occupations in bold refer to the middle skilled occupations

Code	Two-digit ISCO occupation classification	N
31	***Science & engineering associate professionals***	***365***
32	***Health associate professionals***	***170***
33	***Business & administration associate professionals***	***578***
34	***Legal social cultural & related associate professionals***	***296***
35	***Information & communications technicians***	***179***
	Sub total	1,588
41	***General & keyboard clerks***	***590***
42	***Customer services clerks***	***515***
43	***Numerical & material recording clerks***	***492***
44	***Other clerical support workers***	***168***
	Sub total	1,765
51	Personal service workers	619
52	Sales workers	1,765
53	Personal care workers	5
54	Protective services workers	991
	Sub total	3,380
61	Market-oriented skilled agricultural workers	2,892
62	Market-oriented skilled forestry, fishery & hunting workers	955
63	Subsistence farmers, fishers, hunters & gatherers	5,623
	Sub total	9,470
71	***Building & related trades workers excluding electricians***	***1,411***
72	***Metal machinery & related trades workers***	***446***
73	Handicraft & printing workers	7,324
74	***Electrical & electronic trades workers***	**203**
75	***Food processing, wood working, garment & other craft & related trades workers***	**278**
	Sub total	9,662

Table A1.4: Broad occupational groupings, civilian population employed 15 years and over, national census of Tonga 2006 and 2011, numbers in each group

Broad Occupation groups	2006	2011	2006-11
	N	N	Differ-ence
1 Legislators, Senior Officials & Managers	699	1,079	380
2 Professionals	2,954	3,881	927
3 Technicians & Associate Professionals	2,007	1,588	-419
4 Clerks	1,832	1,765	-67
5 Service, Shop & Market Sales Workers	3,012	3,380	368
6 Skilled Agricultural & Fishery Workers	10,268	9,470	-798
7 Craft Etc Trades Workers	11,644	9,662	-1,982
8 Plant, Machine Operators & Assemblers	882	908	26
9 Elementary Occupations	1,364	1,244	-120
Total	34,662	32,977	-1,685

Table A1.5: Percentage change in each occupational grouping, civilian population employed 15 years and over, national census of Tonga 2006 and 2011, numbers in each group

Broad occupational group	per cent change
Legislators, Senior Officials & Managers	54.4
Professionals	31.4
Technicians And Associate Professionals	-20.9
Clerks	-3.7
Service Workers, Shop & Market Sales Workers	12.2
Skilled Agricultural & Fishery Workers	-7.8
Craft /Trades Workers	-17.0
Plant & Machine Operators & Assemblers	2.9
Elementary Occupations	-8.8
Total employed	-4.9

Annex 1.2: Analysis of Job Advertisements in Tonga

Information was collected by TSP staff on 78 job advertisements over a three-month period in 2012. Each occupation was coded according to the International Standard Classification of Occupations (ISCO) 2008. Altogether two-in-five (41 per cent) of the job advertisements are in occupations below professional at the technician/associate professional, clerical or sales and service work levels. The largest group of occupations advertised (20) refer to technician /associate professional occupations, nine are clerical, and two refer to service work and one involves providing building maintenance services. Of the 46 jobs advertised, 20 were temporary. One advertisement was for 15 aged care workers on a temporary basis.

The industry sectors with the most job advertisements were: financial & insurance activities; human health & social work activities; public administration; activities of donor organisations; and transportation & storage. For the occupations below professional level, the main sectors seeking these skills were: public administration; financial & insurance activities; and transportation & storage.

The technician/associate professional-level occupations are shown below. Nine of the 20 jobs require a post-secondary qualification and another two did not state them in the job advertisement but would be required in the selection process (Bosun - Marine Master qualification, and an IT Officer required to create & administer network & websites - a diploma in information technology).

Table A1.2.1: Technician/associate professional-level occupations according to ISCO 2008 listed in advertised jobs, over three months, Tonga, 2012

Job title	Job requirements	Required qualifications
Assistant Air Worthiness - Officer		Form 7
Bosun	Safely operate MV Hifofua	n/a
Chief Clerk		Higher Leaving Certificate
Coach - Women 7's	Direct & supervise	n/a
Committees Clerk/Researcher	Provide secretarial and technical support	n/a
Computer Operator Grade 3		Diploma in IT
Finance & Office Admin.(Australian Sports Outreach Program Tonga)	Maintain and handle day to day office operations	n/a
Foreman Mechanics	Asst. supervisor	Trade Cert. in Mechanical Eng.
Head Coach - National 7's	Direct, formulate, implement	n/a
Health Co-ordinator	Co-ordinate health activities	Relevant tertiary qualifications
IT Officer	Install, configure, monitor computer systems and network	Diploma in Information System, Information Technology, Computer System

Job title	Job requirements	Required qualifications
IT Officer	Create & administer network & websites	n/a
Marine Officer (Engineer)	n/a	Master Engineer Class III
MET Technician Gr 2	To implement, report and advise	Pacific Senior Secondary Certificate (F6)
National Academy Coach	Direct & supervise	n/a
Personal Asst./Research	To do research and present	n/a
Senior Asst. Marine Officer - Nautical		Tertiary qualification in relevant field
Senior Front Line Associate	Sales and admin support	Diploma in Accounting
Senior Marine Officer (Nautical)	n/a	Master Engineer Class III
Settlement Officer (Domestic)	Reconciliation and settlement of accounts	Dip. In Accounting, finance, banking

The main industry sectors advertising jobs at the technician/associate professional level are: water transport; public administration; information service activities; sports activities and amusement and recreation activities; and financial service activities.

Table A1.2.2: The industry sectors of technician/associate professional-level occupations, in advertised jobs, over three months, August to end of October Tonga, 2012

Industry sector	N
Water transport	5
Air transport	1
Information service activities	3
Financial service activities	2
Public administration	4
Social work activities	1
Sports activities, amusement & recreation activities	3
Activities of extraterritorial organisations & bodies	1

The nine clerical jobs advertised are listed below. Four of the nine require a post-school qualification.

Table A1.2.3: Clerical occupations according to ISCO 2008 listed in advertised jobs, over three months, Tonga, 2012

Job title	Job requirements	Required qualifications
Clerk Class 1	Audit Office	Tonga School Certificate plus five years work experience
Clerk Class 1	Public Service Commission	Pass in Tonga School Certificate
Front Line Associate/'Eua	Process customer transactions and handle customer enquiry	Form 7
Junior Medical Recorder	Health Department	Tonga School Certificate
Logistics Officer	Ensure procurement procedures are followed	Relevant tertiary qualifications
Registry Clerk	Public Service Commission	Higher Leaving Certificate
Statistical Assistant - Economic	Assist collect and process data	Diploma in Economic and Business
Statistical Assistant - Finance	Assist collect and process data	Diploma in Finance and Commerce
Transaction Reporting Officer	Asst. Transaction Reporting Officer	Dip. In finance, banking, commerce

One of the remaining three job advertisements require a post-school qualification. The position is for an ‘assistant building officer’ to help maintain a multi-storey building. The qualification required is a ‘Diploma in plumbing, carpentry and joinery’. The other two jobs advertised were for a cashier and required a Pacific Senior School Certificate and the other was for fifteen aged care workers, with no education qualifications specified.

Table A1.2.4: Required qualifications of advertised jobs, over three months, Tonga, 2012

Required qualification	per cent
Degree or higher	35.9
Diploma Nursing or higher	9.0
Other post-school quals	19.2
School Leaving Certificate	12.8
Other	1.3
Not available	21.8
	100.0
N	78

The distribution of required education qualifications in the job advertisements are shown in Table A1.2.4 above. Over a third of the jobs advertised required applicants to have a degree or higher qualification. One-in-ten positions required a nursing diploma or higher. One-in-five positions (19 per cent) required another post-school qualification. And near to one-in-six positions required secondary school leaving certificates. Over one-in-five advertisements (22 per cent) did not specify a qualification although it is possible to infer what type of qualifications would be required. Two examples a bosun to operate safely a sea going vessel and an IT (Information Technology) Officer required to 'create & administer network & websites'.

It was also possible to infer the type of qualifications required based on the advertised job description for a number of jobs. The following table shows the results of this exercise. The proportion of jobs requiring a degree or higher qualification lifts to two-in-five (41 per cent) from 37 per cent. The share of jobs that do or may require a post-school qualification lifts from one-in-five (19 per cent) to over one-in-four (27 per cent).

Table A1.2.5: Required and inferred qualifications of advertised jobs, over three months, Tonga, 2012

Required qualification	per cent
Degree or higher	41.0
Diploma Nursing or higher	9.0
Other post-school quals	26.9
School Leaving Certificate	12.8
Other	1.3
Not available	9.0
	100.0
N	78

Chapter Two: The Supply of Skills and Employment Outcomes

This chapter discusses the quantity and quality of the education inputs into the TVET process, the importance of foundation skills in literacy and numeracy and what are meant by behavioural and social skills. Census data are used to show the existing middle-level stock of skills in the formal economy, based on the share of workers in each middle occupation with post-school qualifications. The remainder of the chapter reports on the employment outcomes achieved by TVET graduates in some 20 fields of study.

General education

Tonga had in 2008 a net enrolment ratio in primary education of 93 per cent of the relevant age group.[19] The 2006 census recorded a net enrolment ratio of 88 per cent. The MDG target is 100 per cent enrolment. Proportion of pupils starting Grade 1 who reach the last grade of primary school was 90 per cent in 2007, similar to the rate of 89 per cent based on the 2006 census results.

The literary rate for 15-24 year-olds was claimed to be 99 per cent in 2006. However, this claim is based on a person's own reply to a question in the census and not on any demonstrated ability to read. As a minority of young people, between 17 and 22 per cent, have not attended or have not completed primary school, the demonstrated rate of literacy among young people is likely to be much lower.

Primary and secondary school enrolment rates for 2009, 2010 and 2011 are presented in the Annex to this chapter. The data have some major gaps such as nearly 2,000 secondary school students in 2011 who cannot be classified by the level of education they are in. However, comparing the same group of students over time shows that 64 per cent of Form 4 students in 2009 have reached Form 6 in 2011 (see Tables A2.1-6).

The major exit years are at the end of Form 5 (the Tonga School Certificate) and at the end of Form 6 (Pacific Senior Secondary Certificate). A small number stay on for Form 7 which is aimed at preparation for university entrance (South Pacific Form Seven Certificate (SPFSC), University of the South Pacific Foundation Level Examinations or Cambridge International Examinations's Advanced Subsidiary). The Form 5 leavers in 2011 are likely to have numbered, 1,017.[20] The Form 6 leavers in 2011 numbered 895.[21] The Form 7 leavers in 2011 numbered 387. Altogether, some 2,300 young people entered the labour market in 2012 after leaving secondary school with Form 5 or above.

Supply of post-secondary graduates

The Secretariat of the Pacific Community commissioned a recent mapping study of technical & vocational education and training in the Pacific. The study offers the following assessment

[19] Second report on progress in achieving the Millennium Development Goals,

[20] Based on the number of Form 5 students in 2010, less those in Form 6 and Hospitality, Vocational, & Commerce subjects in 2011.

[21] Based on the number of Form 6 students in 2010, less those in Form 7 in 2011.

of the supply of skills in Tonga: 'formal TVET provision in Tonga is complex and fragmented, and delivered by many small and relatively inefficient Government, faith-based and private-sector providers'.[22]

The list of training providers and qualifications, with available data on enrolments and graduates can be found in Annex 2, Table A2.7. It is obvious that there are major gaps in the data for most training providers. No institution has been able to provide data on the number of all enrolments or graduates by qualification for the last two years. Only four institutions have data on their 2012 graduates. Table A2.8 summarises the numbers of graduates by field of study.

Education attainment alone is increasingly viewed by policy makers in developed and developing countries as a weak measure of the standard of education young people have acquired. Measures of the literacy & numeracy of school students and the labour market outcomes they achieve are seen as more important measures. The issue of whether the flow of graduates is meeting the needs of the labour market is addressed below when the results of the 2011 Graduate Tracer Survey are presented. This survey collected information on the employment status of graduates from post-secondary providers for the years 2007 to 2010.

Overseas scholarships

A further potential supply of middle-level skills is from training institutions overseas. The available source of information on this potential supply is the list of current and just completed scholarship holders funded by the Government of Tonga and donors. Checking the list of current scholarship holders in April 2012, only three out of 113 are studying for diplomas or a TVET qualification (Diploma of Physiotherapy, Diploma of Dental Technology, TVET, UNITEC, New Zealand). Thirty five are listed as completing their studies and were expected to return in 2012. Only two of these graduates have a TVET qualification (a National Diploma Mechanical Engineering and a BA in Applied Technology, Automotive Engineering).

Foundation and generic skills

New efforts are being made to measure the cognitive, social and technical skills young people have when they leave full-time education. Three types of skills can be identified: cognitive (or thinking) skills, social skills and technical skills.[23] Cognitive skills refer to the ability to read and write, being able to express oneself verbally, have a good working memory, and being numerate and able to solve simple problems. These cognitive skills are not only formed in the early years of schooling but also benefit greatly from support given by parents and the wider family.[24] Social skills refer to the ability to work with others as part of a team, to be reliable, to show self-discipline and to make the effort to complete the work as expected. Technical skills refer to the ability to perform certain tasks.

[22] Dr Martin Grinsted, 2011, Mapping Study of Technical & Vocational Education and Training in Pacific ACP Countries Final Report, Secretariat of the Pacific Community, August, p 49.

[23] Box 5.7 'How skills are formed and how they are measured' in World Bank, 2012, **World Development Report 2013: Jobs.** Washington DC, p 175

[24] See Note 17.

Foundation cognitive skills

Standardised Test of Achievement of Tonga (STAT) is a national assessment of literacy and numeracy skills for students in Class 4 and Class 6 of primary education. The test, administered in both English and Tongan, evaluates if students were developing the literacy and numeracy skills expected at their grade levels. STAT reading results have revealed the need for major improvements on reading comprehension and writing composition in both languages and grade levels.[25]

The Tonga Early Grade Reading Assessment

As part of the Government of Tonga's effort to improve reading levels, an early grade reading baseline assessment was conducted in November, 2009 with support from regional education partners. Survey results showed major gaps in literacy learning. The survey results showed that only 192 out of 1,203 students (17 per cent of the sample) in Grades 1 to 3 could be considered fluent in reading. Only 3 in 10 students at the end of Class 3 are able to develop fluency in reading, an ability strongly related to reading comprehension.[26]

It is not known what the literacy and numeracy skills of 15 year-old Tongan students are. However, the responses of employers suggest that many secondary students lack basic foundation skills in reading and working with numbers as well as English language capability.

Behavioural and social skills

Although cognitive (thinking) skills and knowledge are important educational outcomes, the competencies required in the workplace and in the wider community cannot be limited to these cognitive elements alone. Employers in the enterprise survey stressed the importance also of the practical skills, attitudes, motivation and values a worker has which are often acquired and developed outcome formal education.[27] A number of high-income countries, including Australia and New Zealand, have identified key or core competencies, life skills and basic skills. These countries have recognised that the supply of social skills is a necessary requirement of the skills formation process.

The Organisation for Economic Cooperation and Development, a think tank which collects and analyses data on a range of countries, carried a project 2002-2005 to work out ‘a limited set of competencies that are essential to personal, economic and social well-being’. These have been based on the common elements of the different key or core competencies identified by OECD member countries. These competencies are presented below.

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[25] MEWAC. 2008. Tonga Standardised Test of Achievement: Results Report (mimeo). 2008 Ministry of Education, Women’s Affairs, and Culture

[26] World Bank. 2012. Tonga report. Vol. 2 of How well are Tongan children learning to read?. Pacific early reading assessments series. Washington DC. http://documents.worldbank.org/curated/en/2012/01/16711049/well-tongan-children-learning-read-vol-2-2-tonga-report

[27] Dominique Simone Rychen, 2009, ‘Key Competencies: Overall Goals for Competence Development: An International and Interdisciplinary Perspective’, in R. Maclean, & D. Wilson (eds.),International Handbook of Education for the Changing World of Work, Springer and the UNESCO International Centre for Vocational Education and Training, Bonn, p 2573.

Employers responses on the gaps in the skills of their workers have highlighted the need for a greater focus by educators on these skills.

Key Competencies
Interacting in socially heterogeneous groups:
the ability to relate well to others;
the ability to co-operate;
the ability to manage and resolve conflict.
Acting autonomously:
the ability to act within the 'big picture';
the ability to form and conduct life plans and personal projects;
the ability to defend and assert one's rights, interests, limits and needs.
Using tools interactively:
the ability to use language, symbols and text interactively;
the ability to use knowledge and information interactively;
the ability to use (new) technology interactively.
Source: Organisation for Economic Co-operation and Development. 2005. The definition and selection of competencies: executive summary. www.oecd.org/dataoecd/47/61/35070367.pdf

Post-school qualifications by occupation

The following section presents information about the formal post-school qualifications held by job incumbents in the occupations classified as technician & associate professional, and craft/trades workers of all residents in Tonga in 2011. A post-school qualification for occupations at the technician level is usually required. The work requires more than skills that can be learned on-the-job. The nature of the work is such that knowledge of the theory is needed to be able to write or read complex instructions, and to problem solve when faced with a non-routine event. In the case of occupations at the associate professional level, formal training based on an understanding of theory is also usually regarded as necessary.

The only occupation group with a high proportion holding a post-school qualification is 'life science technicians & related associate professionals', with 80 per cent (see Table A2.9). Next comes 'nursing & midwifery associate professionals', with 62 per cent. Two occupation groups have half of their number with a post-school qualification: 'physical & engineering science technicians', and 'medical & pharmaceutical technicians'. Over two-in-five (43 per cent) 'financial & mathematical associate professionals' have a post-school qualification. A similar proportion (39 per cent) applies to 'other health associate professionals'.

Table A2.10 reports the proportion of people in each trade-level occupation with a post-school qualification. As most skills acquisition for craft or trades occupations is done on-the-job, formal qualifications are much less common than for the occupations of technicians. However, it is common for many countries to set up an apprenticeship system to codify and recognise the skills learned on-the-job as well as ensure that some formal training is also provided. Entry for trade level occupations to Australia and New Zealand via skilled migration requires that these trade skills have been assessed by an independent body.

The two trade-level occupations which have the highest proportions of people with recognised skills are: Electronics & telecommunications installers & repairers (39 per cent) and Electrical equipment installers & repairers (32 per cent). However, even in these two occupations where externally recognised skills are important, three-in-five and two-in-three respectively do not have post-school qualifications.

Construction work is a major source of work in Tonga. However, most of the skills required to do this work are learnt on-the-job and are not recognised formally. The 2011 census reports that most building workers do not have post-school qualifications. It is only about one-in-twenty of the 1,201 Building frame & related trades workers have a post-school qualification. Only one-in-five of the 143 Building finishers & related trades workers, and one-in-six of 67 Painters, building structure cleaners & related trades workers are so qualified. These census figures show that only a small number of construction workers have the potential to migrate for work based on a recognised qualification.

Machinery mechanics & repairers is another important source of skilled work in Tonga. However, less than one-in-five of the 409 people working in this trade-level occupation group have a post-school qualification. Less than one-in-ten of the 169 Food processing & related trades workers and 85 Garment & related trades workers have a post-school qualification.

Handicraft workers are the largest occupation group at this level. As this involves traditional skills, no external form of skills recognition exists. Another important occupation relevant to TVET are vocational teachers. The census results show that four-out-of-five (81 per cent) of the 90 vocational teachers have a post-school qualification.

Post-secondary graduate employment outcomes

The real test of whether the supply of skills is meeting the demand is whether graduates of the training are in paid work and whether this work matches the skills for which they trained. A tracer survey of the 2007-2010 graduates from Tongan post-secondary institutions was conducted in March/April 2011 by the Ministry of Training, Employment, Youth & Sports (MoTEYS), and funded through the Tonga TVET Strengthening Program (TSP1). The detailed results are reported in Annex 2.2 to this chapter.

Good employment outcomes

The results showed that the employment outcomes of graduates varied greatly by their post-school qualifications and type of connection to employers. At one extreme, the tracer survey showed that virtually all nursing graduates are employed. This is due to the close connection between the training institution and the main employer of nurses in Tonga, the Ministry of Health. Nurses are recruited to training with the expectation that they will have a job at the end of their training. The numbers invited to enter training each year are determined by the

needs of the employer. The employment relationship, like an apprentice, starts when the student nurses are recruited as trainees.

There are 217 nurses working in the health sector and another 25 working as nursing professionals in public administration. These numbers suggest that the domestic demand for nurses is limited to replacement demand, determined by retirement and emigration. The intake of trainee nurses is limited to meeting domestic demand only.

For teachers, nine-out-ten graduates are employed. In this sector, the number of employers is greater than is the case with nursing, with both government and church schools offering employment. There are 961 secondary school teachers and 791 Primary school and early childhood teachers as well as 90 vocational teachers. So if the share of teachers retiring or otherwise leaving teaching was 10 per cent each year, this would create over 180 vacancies. Enough to absorb new graduates.

Agricultural graduates also have a high employment rate (92 per cent), probably due to a close connection with the Ministry of Agriculture for the Diploma graduates. It is worth noting that both certificate holders were not employed.

Employment outcomes that could be better

Training for the private sector fared less well in terms of employment outcomes. Accounting graduates at the certificate and diploma levels had reasonably high employment outcomes (79 and 75 per cent respectively). However, significantly, 22 per cent of the Diploma graduates were looking for work. Similarly, only seven-in-ten business graduates were in employment with 23 per cent looking for work. Closer ties with employers, through, for example, work placements as students, may reduce this level of unemployment among accounting graduates. However, there are only 274 finance professionals and 145 finance associate professionals, adding up to 419 in total. The level of replacement demand is not likely to be high so the number of job vacancies may be limited.

The graduates of the Diploma in Construction & Architectural Technology did not fare as well as the trade-based certificate holders. Of the 13 diploma graduates, near to 70 per cent are in employment with the rest seeking work. Of the 11 carpenters with a trade certificate, eight are employed, and three are looking for work. Twelve of the 13 holders of Trade Certificate In Electrical Engineering are employed, with one undertaking further study. The latter have benefited from having employment as part of their training arrangements. A similar arrangement is needed for the diploma students.

Weak employment outcomes

A number of training programs have employment outcomes which are weak. The certificate in information technology has only a one-in-five employment rate, with over a third looking for work and near to half going onto further study. These results strongly suggest that the certificate level training program is not providing its graduates with the skills needed to hold a job related to information technology.

The employment rate for the diploma graduates of information technology is better at near to two-in-three. However, nearly one-in-four graduates are looking for work. A closer connection with workplaces during training may reduce this level of unemployed diploma

graduates. However, it needs to be noted that there are only 126 jobs for 'Information and communications technology operations and user support technicians' so the number of opportunities to find work is low, given that the replacement demand is low.

Few graduates of the certificate in secretarial studies have found paid work. Only one-in-three are employed, and half of the graduates are looking for work. This may be due to the lack of jobs for secretaries. More likely, employers may prefer graduates with higher qualifications such as a diploma in business. The holders of diplomas in business studies have a seven-in-ten employment rate. There are 204 administrative and specialised secretaries at the associate professional level and 255 general secretaries at the clerical level. This relatively small number of just under 460 suggests that replacement demand would be lower than the number of graduates at certificate and diploma levels seeking work as secretaries.

The two qualifications aimed at employers in hospitality and tourism also have weak employment outcomes. Less than half (45 per cent) of the certificate holders in cooking and hospitality are in paid work and over half are looking for work. The census shows that there are only 239 cooks and up to 93 chefs so a large number of graduates in cooking will have trouble finding work. The same picture holds for the diploma graduates in tourism & management with 47 per cent employed and 50 per cent looking for work. These poor employment outcomes could be due to a number of factors. One factor could be the downturn in the industry after 2008. There are 98 hotel and restaurant managers so the number of vacancies for managements positions will be low.

In relation to the certificate in commercial cooking, the skill levels and range of experience offered by the course may be below what employers are looking for. Competencies based on international standards may be one element of what is needed. Another could be apprentice-type employment and training to provide more extensive opportunities for learning on-the-job. Thirdly, work placements in overseas resorts in Fiji, New Zealand or Australia may be needed to enable graduates to cook for demanding international tourists. Similarly, the Diploma in Tourism & Management may not have enough opportunities for students to learn on-the-job.

The employment outcomes of graduates with maritime qualifications are also weak with up to a half of graduates looking for work. The absence of an employment service which can collect information on job vacancies in the domestic maritime sector may be one contributor to this situation. Another factor is the low number of positions available. The census records only 140 ship and aircraft controllers and technicians.

Conclusion

This chapter has highlighted the range and extent of the supply of middle-level skills training in Tonga. The absence of comprehensive data on student enrolments and the number of graduates for each qualification has made it difficult to provide the exact numbers. The employment outcomes reported for these qualifications show how, in some instances, close ties with employers are part of the training arrangements. However in other cases, the links with employers are weak or non-existent. This is shown by the poor employment outcomes for a number of qualifications. The training providers of qualifications in information technology, secretarial studies, and cooking and hospitality in particular have to look more closely at why their graduates are not doing much better in the labour market.

Annex 2.1

Tables A2.1 to A2.6: Overall primary and secondary enrolments, Tonga, 2009 to 2011

Overall Primary Enrolments 2009	
Class 1	2,857
Class 2	2,761
Class 3	2,789
Class 4	2,671
Class 5	2,644
Class 6	2,977
IE	20
Total	16,719

Overall Secondary Enrolments 2009	
Form 1	2,612
Form 2	2,455
Form 3	2,413
Form 4	2,500
Form 5	2,499
Lower 5th	170
Vocational	179
Form 6	1,533
Form 7	315
Total	14,676

Overall Primary Enrolments 2010	
Class 1	2,850
Class 2	2,786
Class 3	2,701
Class 4	2,735
Class 5	2,605
Class 6	3,138
Inclusive	24
Not stated	9
Total	16,848

Overall Secondary Enrolments 2010	
Form 1	2,666
Form 2	2,665
Form 3	2,385
Form 4	2,321
Form 5	2,683
Lower 5th	157
Form 6	1,513
Form 7	387
Total	14,777

Overall Primary Enrolments 2011	
Class 1	2,875
Class 2	2,764
Class 3	2,724
Class 4	2,628
Class 5	2,645
Class 6	3,181
Inclusive	21
Not stated	195
Total	17,033

Overall Secondary Enrolments 2011	
Form 1	2,163
Form 2	2,212
Form 3	2,023
Form 4	1,787
Form 5	2,251
Lower 5th	48
Form 6	1,604
Form 7	618
Hospitality	18
Vocational	169
Commerce	32
Unstated	1,949
Total	14,874

Source: Ministry of Education and Training

Table A2.7: Post-secondary training providers, field of study, level, duration, sector, enrolments and graduate numbers, 2011 & 2012, where available

Institution	Course	Level	Duration		Industry sector	Student intake		Graduates	
			Seme-sters	years		2011	2012	2011	2012
St Joseph's Business College	Secretarial Studies	Cert 4	4	2	Business	28		46	
Montfort Technical Institute	Automotive Trade	Cert 4	4	2	Automotive repair		27	14	
	Building Carpentry	Cert 4	4	2	Construction			16	
Ahopanilolo Technical College	Commercial Cookery & Catering Operations	Cert 4	4	2	Tourism	90		32	
Tonga Institute of Higher Education	Accounting	Cert&Dip	2 to 4	1 to 2 yrs	All sectors	26		21	45
	Information Systems	Cert&Dip			All sectors	42		6	26
	Computer Science	Cert&Dip			All sectors		17	9	23
	Media & Journalism	Cert&Dip			Media		5	5	8
Tonga Institute of Science and Technology	Carpentry and Joinery	Cert 4			Construction	32	18	8	11
	General Engineering	Cert 4			Construction	n/a	17	7	4
	Auto Mechanics	Cert 4			Auto repair	28	33	13	29
	Electrical Electronics	Cert 4			Electricity	26	36	11	6
	Panel Beating and Spray Painting	Cert 4			Auto repair	22	12	n/a	9
National Centre for Vocational Studies	Tourism Mgt	Diploma	2		Tourism			14	
	Int'l Business	Diploma	2		All sectors			19	
	Info Tech	Diploma	2		All sectors	20		18	
	Agriculture	?	?			?	?	?	?

Table A2.7 (continued): Post-secondary training providers, field of study, level, duration, sector, enrolments and graduate numbers, 2011 & 2012, where available

Institution	Course	Level	Duration		Industry sector	Student intake		Graduates	
			Seme-sters	years		2011	2012	2011	2012
Tupou Tertiary Institute	Diploma Business	Diploma			All sectors		149		48
	Certificate in Information Technology	Cert			All sectors		28		15
	Diploma in Information Technology	L5			All sectors		51		11
	Diploma in Information Technology	L6			All sectors		44		6
	National Certificate in Computing	NCC			All sectors		15		4
	Diploma of Construction (L5)	L5			Construction		20		
	National Diploma in Architectural Technology	L6			Construction		23		14
	Certificate in Office Administration and Computing (Advanced)	L3			All sectors		16		8
	Certificate in Office Administration and Computing (Intermediate)	TSY1			All sectors		26		20
	Bachelor in Information Technology				All sectors				3
	Diploma in Teaching				Education		40		7
Queen Salote School of Nursing	Diploma in Nursing	L5	6	3	Nursing	31	40	27	32
	Advance Diploma in Nursing Practice (Non-Communicable Disease Nursing)		2	1	Nursing	0	0	0	0
	Advance Diploma in Nursing Practice (Midwifery)		2	1	Nursing	0	0	0	15
	Post-basic Nursing in Critical Care			1	Nursing	0	0	0	0
Unuaki ‘o Tonga Royal University of Technology/ Institute	Certificates in Tourism and Hospitality	L1-L4		2				151	

Table A2.8: Field of study, level, graduate numbers, 2011 & 2012, where available

Field of Study	Level	2011	2012
Office skills			
Secretarial Studies	Cert 4	46	
Diploma Business	Diploma		48
Certificate in Office Administration and Computing (Advanced)	L3		8
Certificate in Office Administration and Computing (Intermediate)	TSY1		20
Total		46	76
Automotive Trades			
Automotive Trade	Cert 4	14	
Auto Mechanics	Cert 4	13	29
Panel Beating and Spray Painting	Cert 4	n/a	9
Building Carpentry	Cert 4	16	
Total			38
Hospitality			
Commercial Cookery & Catering Operations	Cert 4	32	
Tourism Mgt		14	
Certificates in Tourism and Hospitality		151	
Total		197	
Accounting			
Accounting	Cert&Dip	21	45
Information Technology			
Information Systems	Cert&Dip	6	26
Computer Science	Cert&Dip	9	23
Info Tech	Diploma	18	
Certificate in Information Technology	Cert		15
Diploma in Information Technology	L5		11
Diploma in Information Technology	L6		6
National Certificate in Computing	NCC		4
Bachelor in Information Technology			3
Total		33	88

Table A2.8 (continued): Field of study, level, graduate numbers, 2011 & 2012, where available

Field of Study	Level	2011	2012
Construction			
Building Carpentry	Cert 4	16	
Carpentry and Joinery	Cert 4	8	11
Electrical Electronics	Cert 4	11	6
Diploma of Construction (L5)	L5		
National Diploma in Architectural Technology	L6		14
General Engineering	Cert 4	7	4
Total		42	35
Nursing			
Diploma in Nursing	L5	27	32
Advance Diploma in Nursing Practice (Non-Communicable Disease Nursing)		0	0
Advance Diploma in Nursing Practice (Midwifery)		0	15
Post-basic Nursing in Critical Care		0	0
Total		27	47
Other			
Media & Journalism		5	8
Diploma in Teaching			7

Table A2.9: Proportion of each occupation at associate professional/technician level with post-school qualifications, per cent, Tonga 2011

ISCO Occupation group (2-digit level)	ISCO Occupation group (3-digit level)	Post-school quals (per cent)	N
31 Physical & engineering science technicians	Physical & engineering science technicians	49.3	134
	Manufacturing & construction supervisors	31.1	45
	Process control technicians	36.4	11
32 Life science & health associate professionals (except nursing)	Life science technicians & related associate professionals	80.0	35
	Ship & aircraft controllers & technicians	47.1	140
	Medical & pharmaceutical technicians	48.9	47
	Nursing & midwifery associate professionals	62.3	53
	Other health associate professionals	38.5	65
34 Other associate professionals	Financial & mathematical associate professionals	42.8	145
	Sales & purchasing agents & brokers	32.4	34
	Business services agents	33.3	24
	Administrative & specialised secretaries	53.4	204
	Regulatory government associate professionals	39.2	171
	Legal social & religious associate professionals	31.8	148
	Sports & fitness workers	34.5	55
	Artistic cultural & culinary associate professionals	18.3	93
	Information & communications technology operations & user support technicians	46.8	126
	Telecommunications & broadcasting technicians	32.1	53

Table A2.10: Proportion of each occupation at craft/trade level with post-school qualifications, per cent, Tonga 2011

ISCO Occupation group (2-digit level)	ISCO Occupation group (3-digit level)	Post-school quals (per cent)	N
71 Extraction & building trade workers	Building frame & related trades workers	**6.3**	1201
	Building finishers & related trades workers	**18.2**	143
	Painters, building structure cleaners & related trades workers	**16.4**	67
72 Metal machinery & related workers	Sheet & structural metal workers moulders & welders & related workers	**25.0**	32
	Machinery mechanics & repairers	**17.8**	409
73 Precision handicrafts, printing & related workers	Handicraft workers	**2.0**	7271
	Printing trades workers	**17.6**	34
	Electrical equipment installers & repairers	**31.6**	152
	Electronics & telecommunications installers & repairers	**39.2**	51
	Food processing & related trades workers	**8.3**	169
	Wood treaters cabinet-makers & related trades workers	**6.7**	15
	Garment & related trades workers	**9.4**	85
74 Other craft & related trades workers	Other craft & related workers	**0.0**	9

Table A2.11 : Current employment status of graduates of post-secondary training providers by age, per cent, Tonga Graduate Tracer Survey 2011

Age group	Employed	Actively looking for work	Not employed & not actively looking for work	TOTAL	N
15-19	29.7	37.8	32.4	100	37
20-24	51.4	30.7	17.9	100	463
25-29	75.8	15.7	8.5	100	293
35+	87.8	7.0	5.2	100	115

Annex 2.2

Tonga Graduate Tracer Survey 2011 employment outcomes

A tracer survey of the 2007-2010 graduates from Tongan post-secondary institutions was conducted in March/April 2011 by the Ministry of Training, Employment, Youth & Sports (MoTEYS), and funded through the Tonga TVET Strengthening Program (TSP1).[28] Eleven post-secondary institutions were asked to participate in the survey through providing lists of their graduates from 2007-2010 together with their contact details. The survey gathered information on 908 graduates over four years, ranging from 170 in 2007 to 313 in 2010.

According to information from the post-secondary institutes, the total number of graduates they produced in the year 2007 to 2010 was 2,102. Some 1,300 former students who had graduated were located by contacting friends, relatives and classmates, and neighbours. Some were found on Internet, via bebo and other social networks. Finding the location of 1,300 graduates represents a follow-up rate of 62 per cent. However, the base number of graduates provided by the training providers was also found to be inaccurate due to a number of duplicated names. So the actual follow-up rate is higher than the 62 per cent.

Of the 1,300 located, some 143 were resident in the islands other than Tongatapu and were not able to be interviewed. Another 252 of those located were resident overseas. These included 147 resident in New Zealand, 45 in Australia, 18 in the USA, 15 in Fiji and 27 elsewhere (China, Japan, Philippines, Niue, Tokelau and Ha'amoa).

Results

The employment outcomes for graduates of post-secondary qualifications in twelve fields of study between 2007 and 2010 can be identified. These are: Agriculture, Accounting, Automotive, Business, Construction, Education, Hospitality & Tourism, IT, Maritime, Media & Journalism, Nursing and Secretarial Studies. Achieving an employment outcome is of less value to the graduate if it is not matched to the skill area in which he or she has trained. Overall, assessment of the field of study compared with the title of the job and name of the employer showed a closer match than expected: 88 per cent of graduates were in jobs that were related to or consistent with the field of study of their qualification. However, the extent of the skills match for job holders varied greatly between qualifications.

The employment outcomes reported below do not take into account the age of the graduate, and how long she or he has been looking for work. As Table shows A2.9, the age of the graduate has a strong effect on whether he or she is employed or not. However, the results do show which qualifications are meeting the demand for these skills in the labour market. Holders of the Diploma of Nursing, for example, have a 98 per cent employment outcome. On the other hand, just less than half (46 per cent) of those with a certificate of hospitality and cooking were in paid work.

The results do not show whether the graduate is already employed before he or she undertook their training and whether they are still with their same employer. So the results reported

[28] I am grateful to Mrs Fatai Soakai, Ministry of Training, Employment, Youth & Sports (MoTEYS) for her help in giving me full access to the data and helpful background information.

below do not show the net employment outcome of each qualification, only the current employment status of the qualification holder. However, most graduates are likely to have gone directly from secondary school to their post-secondary training program, and so few of the graduates are likely to have been already employed same field.

Agriculture

Fifteen respondents indicated that they had obtained a qualification in Agriculture. Of these 13 had obtained a diploma and two a certificate. Those with a diploma had an employment rate of 92 per cent with the remainder actively looking for work. Both certificate holders were not employed and looking for work. Two-thirds of the job holders were in jobs that matched their field of study.

Field of Study	Qualification	Employed	Looking for work	Total	N
Agriculture	Diploma	92.3	7.7	100	13

Accounting

Sixty-one respondents reported that they had a qualification in Accounting. Of these 29 had obtained a certificate and 32 a diploma. Those with a certificate had an employment rate of 79 per cent with 10 per cent looking for work and 10 per cent undertaking further study. Three quarters of the diploma holders were in employment, 22 per cent were looking for work and 3 per cent were undertaking further study. Most of the jobs of the graduates in accounting matched their field of study. The skills match is 91 per cent for certificate holders and 95 per cent for graduates with a diploma.

Field of Study	Qualification	Employed	Looking for work	Further study	Total	N
Accounting	Certificate	79.3	10.3	10.3	100	29
	Diploma	75.0	21.9	3.1	100	32

Automotive

Twenty-two respondents had undertaken a qualification related to automotive maintenance and repair. Ten had gained a Trade Certificate in Automotive Mechanics from TIST (Tonga Institute in Science & Technology). This training took place over a three or four-year period, combining formal classroom instruction with an extended work placement or employment. Nine of the ten holders of the Trade Certificate in Automotive Mechanics were in paid work. TIST also offers a Trade Certificate in Panel Beating and Spray Painting. Three graduates of this certificate responded and all were employed.

Nine of the ten were employed, and one is unemployed. Montfort Technical Institute offers a two-year Certificate in Motor Vehicle Mechanic & Automotive Technology. Nine graduates of this certificate responded, 6 were in employment and three were looking for work. The following table combines the three certificates to provide a more statistically robust sample size. Of those with formal jobs, half of the job titles matched the field of study. Four were also self-employed or running their own business, and it can be assumed that they were using the skills they had acquired.

Field of Study	Qualification	Employed	Looking for work	Total	N
Automotive	Certificate	81.8	18.2	100	22

Business

Eighty graduates of business-related qualifications responded to the survey. These qualifications and the number of graduates were: nine with a Diploma In International Business (National Centre for Vocational Studies), 57 with a Diploma in Business and 14 with a Diploma in Business Management (both Tupou Technical Institute). All of the graduates in the Diploma In International Business (National Centre for Vocational Studies) are in employment. Nearly two-thirds (65 per cent) of the graduates of the Diploma of Business and four-out-of-five (79 per cent) of the Diploma of business Management are in work. The following table reports the three qualifications together. The overall skills match to current job is high (93 per cent).

Field of Study	Qualification	Employed	Looking for work	Further study	Other	Total	N
Business	Diploma	71.3	22.5	5.0	1.3	100	80

Construction

Forty-four respondents to the tracer survey had qualified in a field of study related to construction. It is likely that this industry is under-represented in the survey for some reason. In relation to the highest qualification, the Diploma in Construction & Architectural Technology, of the 13 graduates, near to 70 per cent are in employment with the rest seeking work. Of the 11 carpenters with a trade certificate, eight are employed, and three are looking for work. Twelve of the 13 holders of Trade Certificate In Electrical Engineering are employed, with one undertaking further study. The other trade certificate holders, mostly in general engineering are too few in number to report.

The overall employment outcome for the construction industry is four- out-of-five employed, with one-in-five looking for work. The skills match to job is high (89 per cent).

Field of Study	Qualification	Em-ployed	Looking for work	Further study	Total	N
Construction	Diploma & certificates	79.5	18.2	2.3	100	44

Education

Most of the holders of a diploma of teaching from the Tonga Institute of Education are employed, with 8 per cent looking for work. The match of the field of study to the job held is high (94 per cent). This may be due to the close connection to potential employers through the 12 months work placement that graduates are required to take to qualify as a teacher.

Field of Study	Qualification	Employed	Looking for work	Further study	Other	N	Total
Education	Diploma	89.4	7.7	1.9	1.0	104	100

Hospitality & Tourism

The Certificate in Hospitality and Cooking from Ahopanilolo Technical College only achieved near to half in employment (45 per cent), and over half looking for work (53 per cent). The Diploma in Tourism & Management from the National Centre for Vocational Studies achieved much the same employment outcome. The skills match to the jobs held is reasonably high (78 per cent).

Field of Study	Qualification	Employed	Looking for work	Study	Other	Total	N
Cooking & hospitality	Certificate	44.7	52.6	2.6		100	38
Tourism & management	Diploma	47.1	50.0		2.9	100	34

Information Technology

Information technology is a popular field of study. However, the employment outcomes for this set of skills are not high. This applies particularly to the Certificate in Information Technology. The respondents have listed both the Tupou Tertiary Institute and Tonga Institute for Higher Education as the institution where they undertook the certificate. Only less than one-in-five are in paid work and a third (37 per cent) are looking for work. However, the proportion in further study is the highest of any course, indicating that certificate holders have used the qualification as a stepping stone to further study, most likely in information technology.

The holders of a Diploma in Information Technology have fared much better with nearly two out-of-three in paid work. Nevertheless near to one-in-four graduates are looking for work, and small numbers are undertaking further study or are in unpaid work. Of the certificate holders, four out of five (81 per cent) were in jobs linked to information technology. A similar skills match applied to the jobs held by the diploma graduates (83 per cent).

Field of Study	Qualification	Employed	Looking for work	Study	Other	Total	N
Information Technology	Certificate	18.3	36.7	43.3	1.7	100	60
	Diploma	63.2	23.2	7.4	6.7	100	89

Maritime

Some 119 respondents had obtained a qualification from the Tonga Maritime Polytechnic Institute (TMPI). These qualifications included Certificate Maritime; Certificate in Fire Fighting, and Certificate in Safety, Certificate Watch keeper & Deck Rating; Engineer Classes, 3, 4 & 5; and Class 4 & 5 Master. These certificates have been grouped into three types to provide a large enough sample size to provide a more stable set of results. Half of the holders of certificates in maritime, firefighting and safety are employed (55 per cent). However, there are major differences between certificates suggesting that in the case of firefighting, that existing employees did the training course.

In the case of the other two sets of qualifications, the employment outcomes are almost the same: three-out-five (62 per cent) are in employment and one-in-three are looking for work.

The overall skills match to job is high at 84 per cent.

Qualification & Field of Study	Employed	Looking for work	Study	Other	Total	N
Certificates in maritime, firefighting and safety	55.0	45.0	0.0	0.0	100	20
Certificate In Watchkeeper & Deck Rating	61.7	34.0	4.3	0.0	100	47
Engineer or Master	61.5	34.6	1.9	1.9	100	52

Media & Journalism

For the Diploma in Media & Journalism, of the eight graduates, seven have found work and one is looking for work. All graduates in paid work were in jobs matched to their field of study.

Nursing

The employment outcomes achieved by the graduates of the Queen Salote School of Nursing have by far the best employment outcomes of all post-secondary institutions. As many as 51 of the 52 nurses surveyed were in paid employment. All of the job holders were in a job related to nursing. As with teachers, this may be due to the close connection to potential employers through the 12 months work placement that graduates are required to take to qualify as a nurse.

Field of Study	Qualification	Employed	Looking for work	Total	N
Nursing	Diploma	98.1	1.9	100	52

Secretarial Studies

Two institutions produced graduates with Certificates in Secretarial Studies: St. Joseph's Business College and the Tupou Tertiary Institute. Their combined results are shown below. Only just over one in three (36 per cent) had found paid work and half (49 per cent) were looking for work. The graduates of the certificate course from St. Joseph's Business College achieved a better employment outcome than those from the Tupou Tertiary Institute, with two-in-five graduates in paid work compared with just under one-in-five. However the reason for this difference is that three in five graduates of the Tupou Tertiary Institute went onto further study. Nearly all of the job holders were in jobs related to their field of study (96 per cent).

Field of Study	Qualification	Employed	Looking for work	Study	Other	Total	N
Secretarial Studies	Certificate	36.2	48.5	10.8	4.9	100	130

Chapter Three: Domestic Demand for Middle-Level Skills

> *The calibre of the majority of our workforce is very poor and their attitude to work is also disappointing. We, as a country, have a responsibility and a lot of work to do to improve the current situation* (Rural employer of 27 workers who expanded his workforce in the previous 12 months).

Many employers in Tonga in 2012 find it hard to recruit workers with the skills they need in their business. Over half (57 per cent) of all employers surveyed in 2012 said it was hard or very hard for them to recruit workers with the skills they need. For enterprises that had increased their workforce in the last 12 months, the proportion saying they hard to recruit workers with the skills they need was higher at 63 per cent of employers.

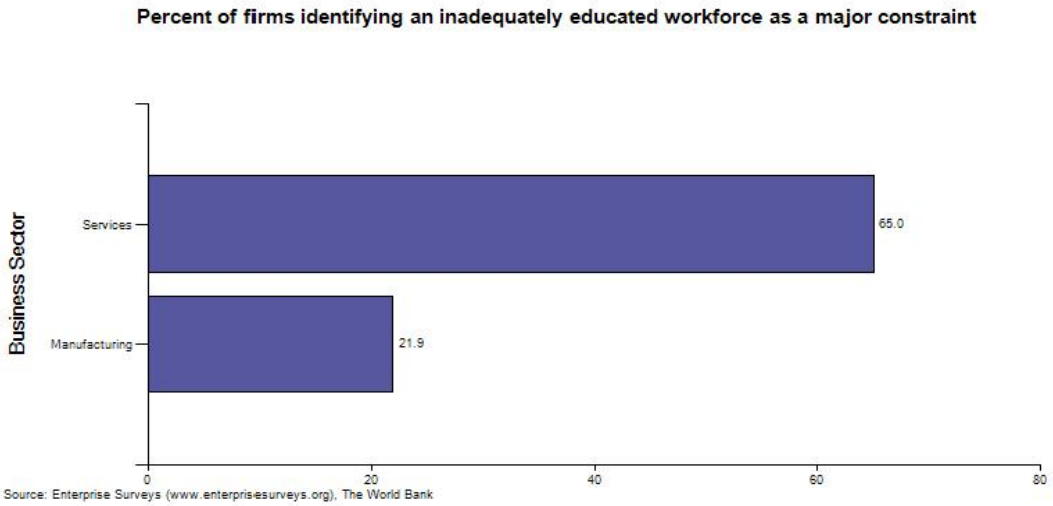
Being unable to recruit new workers with the right skills is only part of the skills deficiency employers face. Many employers face a skills gap in their existing workforce. Employers were also asked whether their existing workers have the skills to do their job? Three-in-ten employers (29 per cent) said that only some of their workers have the skills to do their job. Another two-in-five (38 per cent) said most of their workers have the skills needed to do their job. Only a third of employers could say that all of their workers have the skills to do their job.

How important are skill shortages and workforce skills gaps compared with other issues facing businesses? Employers rated 'finding skilled workers' as the most important issue their business faces (see Table 3.1). It shared equal importance with government regulations. The third issue they rated as the most important facing their business was 'the lack of good work habits among our workers'. Employers rated skills shortages and skills gaps in their workforce slightly above the state of the roads, business permits, and the electricity supply. They rated as less important issues: the tax system, access to credit or finance, and problems with suppliers. The least important issue employers faced was the cost of foreign workers.

The context

The World Bank conducted an enterprise survey in Tonga in 2009.[29] The representative sample is of 150 private sector enterprises, not in agriculture and located in Tongatapu. Four out five were domestically owned. Two-thirds had women participating in the ownership of the firms. Most (87 per cent) of the private sector firms surveyed had less than 20 employees (average 7.3 permanent employees). The remaining firms surveyed have an average of 23.1 permanent employees.

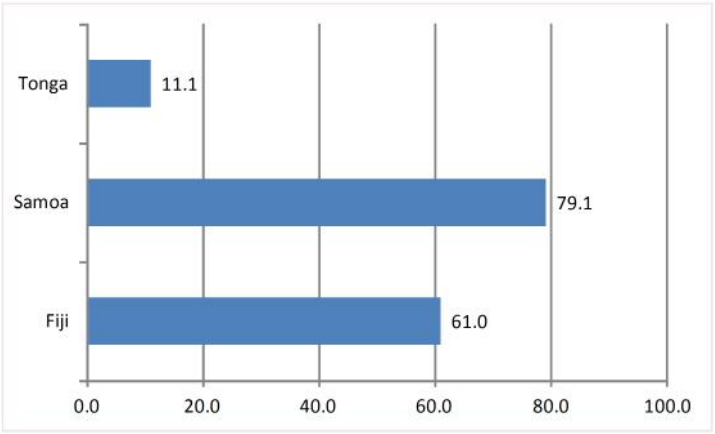
[29] The surveys, conducted in over 225 countries, are based on a representative sample of firms in the non-agricultural formal private economy. The sample size for Tonga is 150, with 54 from manufacturing, 64 from retail and 32 from other services. The sample includes the entire manufacturing sector, the services sector, and the transportation and construction sectors. Excluded are public utilities, government services, health care, and financial services sectors.



The graphic above shows that it is the firms in the services sector that are much more likely to say that an inadequately educated workforce is a major constraint. It is worth noting that no firms in the services sector report that they offer any formal training and only just over one-in-ten (13 per cent) of firms in manufacturing say they provide formal training for their employees.

A feature of the World Bank's Enterprise Surveys is the capacity to compare the results for countries in the same region or wider afield. This comparison shows that the proportion of firms in Tonga offering formal training is much lower than in other neighbouring countries. Only one-in-ten Tonga firms provide training compared with four-out-of-five (79 cent) in Samoa, three-in-five in Fiji (61 per cent) and one-in-two (48 per cent) in Vanuatu.[30]

Figure 2: Per cent of private sector firms in Tonga, Samoa & Fiji, offering formal training, 2009



Source: Enterprise Surveys (www.enterprisesurveys.org), The World Bank.

Other important survey results which reinforce this picture are the low proportion of firms in Tonga that are exporters. Tonga has only one-in-twenty (5 per cent) firms which export directly or indirectly at least one per cent of their sales. This compares with Fiji and Samoa

[30] The data from the enterprise surveys are sourced from the custom query facility at Enterprise Surveys (www.enterprisesurveys.org), The World Bank.

where one in five (19 per cent) and one-in-four (26 per cent) respectively are exporters, using the same definition.

An export orientation often provides the incentive for enterprises to invest in training for their workforce. One form this export focus takes is for an enterprise is to obtain an international quality certification. In Tonga, less than one-in-ten (8 per cent) of firms have an internationally recognised quality certification, compared with one one-in-five (23 per cent) in Fiji and nearly one-in-three (31 per cent) in Samoa. This low export focus helps explain why so few enterprises in Tonga in 2009 had a website, compared with neighbouring countries. Little more than one in twenty (7 per cent) of Tongan firms in 2009 had a website, compared with one-in-three in both Fiji and Samoa.

These results show that private sector firms in Tonga are much less likely to invest in training their workers compared with other countries in the region and point to some of the reasons why. At the same time, most firms are not happy with the skills of their workforce. These two conclusions indicate that many firms in Tonga operate with what they see as a low skills base, but they do not have the resources or capacity to change the situation.

What types of skills are needed by employers

The Enterprise Skills Needs Survey 2012 asked employers to say what specific and general skills they needed. Multiple responses were encouraged, and 265 replies were received about the general skills needed by employees.

Types of generic skills needs

Employers, in addition to technical skills, are seeking a range of general skills which include both cognitive and social skills. One employer highlighted the importance of these skills by stating:

> *When recruiting we look mainly for attitude, work ethic & honesty. We can train anyone who has the right attitude. Often we struggle to find applicants that truly understand a business environment & the expectations we have.*

Cognitive or thinking skills

The cognitive or thinking skills they are seeking are spoken English, basic computer skills, numerical skills, and how to solve problems. The ability to speak English is also included here as a basic cognitive skill because the language of instruction in the school system after Grade 4 is English.

The words employers use to describe the cognitive skills they are seeking are: ‘basic English grammar, spelling etc’; ‘English communication’; ‘speak confidently to foreigners’; the need to be ‘bilingual - fluent; and communication in English’. The references to computer skills included the following: ‘computer skills’; ‘lack of basic computer and analytical skills’; ‘computer skills are now important’; ‘computer literacy’; ‘IT skills’; ‘can use computer’; ‘sound computer skills’, ‘lack IT knowledge’; ‘computer literate skills’ and ‘computing skills (basic)’.

The numerical skills required were described in the terms: ‘money handling’; ‘solve

mathematical problems quickly and accurately to avoid costly mistakes'; 'working accounting skills'; 'financial skills'; 'math'; and 'numerical skills'.

Problem-solving skills are described in the following terms: 'maintaining vehicle they use for work'; 'unable to problem solve due to lack of life experience'; 'reporting your failures'; 'solving conflicts in the workplace'; 'cut and shape material and be able to join them together'; 'ability to apply knowledge to an application'; 'training skills'; an 'ability to learn'; and the 'ability to see small details'.

Behavioural and social skills

Employers expect an employee to have a range of behavioural and social skills. They are described in the following terms: 'attentive'; 'attitude'; 'commitment to the task given; 'commitment-productivity misunderstanding'; 'consistency in effort and application of the skills'; 'dependability (lack of commitment)'; 'good work ethics'; 'honesty'; 'hygiene'; 'initiative'; 'personality'; 'punctuality'; 'safety'; 'values/core beliefs'; and 'willingness to work & work hard'.

Many employers referred to the need for customer service skills. In some cases, specific details are given. These included: 'closing the sale - selling skills'; 'building better/close relationship with customers'; 'follow-up with customers'; 'service standards'; and 'customer service skills, marketing skills'. One detailed comment offered was: 'Tour guides with ability to connect well with customers (Excellent social & customer service skills)'.

The personal skills related to time management and ability to set priorities are important. These are described in the following terms: 'being on time'; 'able to organise work & set priorities'; 'management skills'; 'unable to meet deadlines'; 'absent too much and for unnecessary [reasons]'; 'not coming to work on time'; 'select material, [able to] plan sequences and method of work'; 'knowing what next to do when doing a job'; 'supervision and follow-up'; 'to think long-term (planning)'; 'on-time performance'; 'time frames'; 'scheduling'; 'time management'; 'work on time'; 'basic administrative skills'; 'office skills'; and able to 'prioritise'.

Specific comments that refer to communication skills are: 'unable to communicate openly'; 'basic understanding of Tongan words & proper grammar & meaning'; 'clear communication'; 'writing skills and writing reports'. One extended comment highlighted the issue of cultural barriers to communication:

> *How & Why to speak with your Manager. Due to cultural hierarchy it is very difficult to discuss business with the staff except in a top-down, non-inclusive way.*

The need for employees to exercise leadership or to take responsibility is referred to in the following terms: 'leadership skills', 'able to work unsupervised', 'supervisory role skills'; 'coaching skills', 'operating machinery safely'; 'ability to take on responsibility'; and 'working under no supervision'. Teamwork is also a key social skill. This is referred to in the following words: 'team player skills'; 'team work'; 'team work and coordination'; and 'working in harmony together'. The lack of these behavioural and social skills indicates that new recruits do have enough opportunities to acquire relevant work experience, and in particular of workplaces operating under pressure to perform.

Technical skills in current demand

Table A3.3 lists the skill needs of employers in November 2012. This table is based on the responses of employers with current job vacancies and their responses to the question about sets of skills their business find hardest to recruit. Businesses with a large number of vacancies may be state-owned enterprises which are waiting for the government delay on recruitment to be lifted at the end of 2012.

1. Agriculture, forestry, and fishing

The enterprises surveyed in this sector are engaged in the following activities: forestry and timber production involving tree felling and sawmilling; the management of fisheries; deep sea fishing and the export & processing of vanilla & agricultural products.

The skill needs of the three forestry and timber producers with 130 employees in total are for skills specific to the forestry & timber industries. These are specified as: tree cutting skills - felling; bulldozer drivers; other heavy machine operators; chainsaw repairers; and skilled mechanics to maintain heavy machinery. A number of managerial roles are performed by foreign workers.

In relation to a deep sea fishing venture with 26 employees, the specific skill needs are: seamanship, chef, and accountant. The general skill needs are 'worker's commitment; worker's reliability; and worker's attitude'.

For the processor and exporter of vanilla & other agricultural products, the skill needs are: vanilla pollination and vanilla drying. For a trading company engaged in agriculture and quarrying with 27 employees, the skill needs are: Qualified and competent workers for the office; need for IT knowledge; and need for qualified tradesmen/women to maintain machines.

2. Mining

A rural-based enterprise producing quarry supplies had skills needs which are more generic than specific. The specific skills requested are: heavy equipment operators, and able to do concrete work. Generic skills sought are: supervisory experience, able to take an inventory, directing customers; writing reports; money handling; correctly filing documents, and scheduling.

A mineral exploration enterprise involved in offshore work wanted specific skills in geology, environmental science, or in geophysics but noted that they are seeking people with relevant experience in their type of work so they can train them on the job.

3. Manufacturing

The range of manufacturing activities undertaken by the enterprises surveyed are as follows: art & crafts; cabinet-making & joinery-furniture; manufacturing & food processing; meat processing/wholesale/retail; tobacco distribution; manufacture of house paints & distribution of marine paints; retail & wholesale of paint & related items; and the production of handicrafts.

In relation to the producers of arts and crafts, the following specific skills are sought: sales person; handicraft producers (who are mostly trained in-house); and a Web designer. The general skills sought are: communication skills; creativity; display art & crafts skills; need to meet deadlines; and quality control. As noted above, few firms in Tonga had a website in 2009. This low usage of the Internet to market their business is reflected in the fact that only one respondent enterprise identified web designer as a skill they needed.

The specific skills wanted are technical or trade based: cabinet making & joinery; skilled technicians (machine operators that can fix their machine); food processing skills; and butchery skill. However, some requested skills are normally learnt on-the-job: such as the skill of packing cigarettes; knowledge of products & how to sell; and understanding paint technology, paint making & colour mixing.

Moreover, a number of the skills identified are not task specific but generic: such as numerical skills; [need to get to] work on time; absenteeism of staff; 'problem of [worker] attitude towards the job & sincerity'; 'there is no urge to excel or do the job right and feel proud for it'. Other generic skills wanted by manufacturing employers were: 'commitment and understanding of productivity; computer skills; middle management training & leadership; ability to apply knowledge to an application; unable to communicate openly, work performance; customer service; food safety; operating machinery safely; marketing; management skills; accounting skills; speaking English; and an ability to learn.

4. Electricity, gas, steam and air conditioning supply

The activities of the three enterprises interviewed from this sector included: sole supplier & distributor of electricity in Tonga; an electrical contractor and retailer, and a provider of refrigeration & air conditioning services.

The main technical skills needed by Tonga Power are: general maintenance & repair technicians; electrical linesmen; specific skills gaps for engineers; project engineer; system controllers; and project manager. The general skills wanted were: a background in electrical engineering; computer and writing skills.

An electrical contractor wanted electricians with 'overseas electrical skills'. English communication was stated as the only generic skill wanted. The supplier of refrigeration & air conditioning services simply said they wanted 'technical skills'.

5. Water supply; sewerage, waste management activities

Three enterprises in the sector of water supply; sewerage, waste management activities provided information on their skill needs. The technical skills they need are: plumbing works skills and mechanical skills. Also mentioned is the need for workers to have 'computer literate skills', 'customer service skills'; and 'supervising and management skills'. The jobs of two foreign workers are described as 'operator at the landfill' and 'supervisor'.

A waste management operator specialising in the removal of solid and liquid waste and its disposal did not mention the need for any technical skills. However, a supervisor highlighted the need for the following generic skills: honesty & reliability (work ethics); safe driving habits;maintaining vehicle they use for work; reporting your failures; and safety in the workplace.

6. Construction

Ten construction firms responded to the survey. Their average number of employees was 29, with a range from 10 to 49 employees.

A major issue for the construction firms is the lack of staff with formal qualifications. The 2011 census data shows that only one-in-twenty (6 per cent) of the largest group of construction workers has a post-school qualification. For a smaller number of workers involving in finishing work such as tiling, finishing wall surfaces and plastering, only less than one-in-twenty (18 per cent) has a post-school qualification. This problem is highlighted by one response which said: 'Quality is lacking not skills'. Other related comments on specific skills needs are: [the need for] 'people with formal qualifications'; 'qualified tradesmen' and 'skilled labour'.

There is a demand for carpenters and plumbers, with each occupation mentioned four times. The need for finishing skills was also strong. These included: wiring, finishing wall surfaces, plastering, painting, and tiling. Supervisory skills are also needed: in the roles of foremen, leading hands and supervisors. Middle management skills were also needed. Specific skill needs mentioned are: quantity surveyor, able to use Quickbooks accounting software and Auto-CAD software.

Another indicator of skills demand is the jobs held by foreign workers. Construction firms provided information about the following foreign workers' occupations: electrician; security/fire system; supervisor; vinyl layer; manager; supervisor; site superintendent; welders; leading foreman and tiling work (temporary).

The most important generic skills needed relate to being able to 'work unsupervised' or 'work according to drawings'; 'knowing what next when doing a job' or 'planning'. One comment provided more detail about what this involved: 'select material, plan sequences and method of work'.

Other sought-after generic skills are: 'people with the full motivation and discipline attitudes'; able to 'solve mathematical problems quickly and accurately to avoid costly mistakes'; and knowledge of tools. Being able to communicate, English language ability and working safely are also important generic skills for construction firms.

7. Wholesale and retail trade; repair of motor vehicles and motorcycles

Fourteen enterprises engaged in wholesale and retail trade responded to the survey, with an average of 23 employees, and a range from 2 to 71 employees.

The need for 'staff to be better qualified', and for 'staff to have qualifications in sales & marketing' was highlighted. Specific technical skills mentioned are: engineering; mechanical engineering; it; aircraft engineer; accountant; electrical engineering; finance; and panel beating. Also sought are 'driving licence' and 'can drive forklift'; 'knowledge of spareparts/product knowledge in hardware/building supplies'; and the 'ability to use a computer'.

Some twenty comments were made about the need for employees to have social skills. The terms used are: 'healthy & good attitude'; 'motivation & attitude'; 'attentive'; 'initiative in

workplace'; 'conscientious attitude to work'; and 'social & good behaviour'. Several referred to the need to show a commitment to work: 'fully committed'; 'commitment to the work given'; or 'commitment to task given'. Also important is: 'punctuality'; 'time management' and 'coming to work on time'. Other related comments are: 'quality of a person' and leadership skills.

Eight employers stressed the importance of customer service skills: 'consumer service throughout'; 'committed to customer service' and 'building better/close relationship with customers' were specific comments. Four employers mentioned the need for skills in clear communication in general or in English. Four employers also highlighted the need 'honesty in handling money.

8. Transportation and storage

The main activities of the 12 enterprises in this sector are: shipping agents and stevedoring; facilitating cargo movement in ports; airport management; aircraft ground handling services; air freight; courier & tourism; travel and cargo; and two domestic airline services covering ticketing/inbound tours/transport shipping. The average number of employees is 49 but with a wide range from 8 to 153 employees.

This industry sector has a number of skill needs at the technical level. In relation to maritime and port activities, the skill needs are: electrical and mechanical engineering; technical skills for the vessel; seamanship; maritime skills; and port machinery operation. In relation to aviation, the technical skill needs are: 'engineers - licensed LAME/AME'; Pilots - for metro/convair captains; flight procedures design; technicians/commercial skills; technical computer skills; IT skills; air traffic controller skills; and more generally: sound computer skills; and supervisory role skills. Also sought after are staff who are dangerous goods certified and trained; staff trained in rescue fire/aviation security requirements; and quality & safety managers. Also needed are staff who are computer literate in terms of the airlines ticketing system and staff with accounting skills.

General skill needs were specified as: communication skills/public relations; reporting skills; administration skills and financial skills. Seven employers highlighted the need for customer service skills in the following terms: selling skills; experience in travel; able to meet customer service requirements; closing the sale - selling skills; telephone skills; and key service skills.

Problems with staff mentioned are: 'Unable to grasp what is required internationally' and 'lack of problem solving due to lack of life experience'. Eight employers highlighted the need for a range of related social skills in these words: industry discipline; self-discipline & motivation; ability to take on responsibility; honesty; able to think outside the square; work ethic; able to work unsupervised; and trustworthy & reliability.

9 & 14. Accommodation, food service activities and tourism related services

The hospitality and tourism sector encompasses accommodation, offering food and drink service and providing services to tourists such as airport transfers, tours, and arranging activities such as scuba diving, game fishing and whale watching. Twenty-six enterprises can be categorised as focusing on accommodation and food services, 14 of these are located in a rural or outer island setting. The average number of employees per enterprise is 14 with a

range of 1 to 35 employees.

Another five enterprises have a single focus on providing activities for tourists. These include: whale watching & diving; diver training, scuba diving, and boat tours; inbound & outbound activities for visiting cruise ships such as kayaking. These enterprises are smaller, with an average of 6 employees, and a range of 2 to 13 employees.

Five sets of technical skills are needed for accommodation and food & beverage services: these are cooking/chef; housekeeping; front-of-house (waitress, bar attendant, receptionists); and maintenance skills (general handyman, make repairs in plumbing, electrical, wood, motors, clean and painting and gardening). Office skills are also sought, covering basic accounting and paperwork. Other specific skills mentioned are: sailing, tour guiding and driving. Six employers said they needed supervisors and middle managers. Of the total number of employees (357) in the enterprises surveyed, only 14 are foreign workers. They are nearly all managers or first-line supervisors.

Twelve employers mentioned their need for people with cooking skills. Ten of these specifically also mentioned the word 'chef', with some adding words like 'qualified' or 'experienced or qualified'. This strong demand indicates that the current TVET provision for cooking is not meeting the needs of the hospitality and tourism industry. This is confirmed by the fact that the tracer survey of post-secondary graduates. Less than half (46 per cent) of those with a certificate of hospitality and cooking were in paid work in 2011.

The 2009 Tourism Training Needs Analysis noted three major gaps in formal education and training for the sector. These were the lack of accredited institutions and curriculum; inadequate teaching facilities for essential courses in professional cookery, food and beverage service and hospitality; and an incomplete supply of adequately qualified and experienced tutors.[31]

The issue may also be related to the lack of relevant and extended work experience for these certificate holders. An apprenticeship arrangement combining formal training off-the-job with on-the-job training may be needed, similar to that which applies to the trade certificates in carpentry and automotive mechanics. Another option is to lift the standard of the cooking skills taught by providing access to an international qualification such as that provided by the Australian Pacific Technical College. However, again, classroom-based instruction may not be sufficient, and the skills expected of a 'chef' may only be acquired through on-the-job training in large kitchens serving a demanding clientele in major tourist destinations in the region.

Skills for activities for tourists

The enterprises providing activities for tourists listed these skill needs: skilled divers; rescue divers; tour guides on land and scuba diving guide. Tour guides need the ability to connect well with customers, based on excellent social & customer service skills. The kayak guides need to be able to operate kayaks safely, and be able to swim well. They also need to have CPR training to apply rescue breathing and chest compressions to help a person whose breathing and heartbeat have stopped.

[31] NZAID Tonga Tourism Training Needs Analysis, Draft Report, 11 September 2009, p 25.

Tour guides also need to be bilingual and fluent in English, able to communicate clearly and speak confidently to foreign customers. They need good knowledge about Tongan history and landmarks.

General skills needed for hospitality

On the issue of what general skills sets they need, employers gave a huge range of examples which can be placed in three broad groupings: communication skills, customer service skills, sets of skills related to personal behaviour and social skills.

In relation to communication skills, orals skills or spoken communication got a specific mention as well as the ability to speak English. The need for customer service skills were mentioned by ten employers, and were best summed by this comment: 'Understanding customers expectations' or 'key service' skills. Another set of skills sought relate to sales marketing. These are described as: public relations/hospitality skills; the need for a qualification in sales & marketing. Also needed is an understanding of the importance of tourism; experience in product knowledge & tourism awareness; and need for a personal experience of tourist activity.

In terms of desired social skills, 35 separate comments were made. Good work ethics or honesty were mentioned by seven employers. The social skills of team work; working in harmony together and solving conflicts in the workplace are mentioned. However, the largest number of desirable traits relate to personal behaviour. The single word descriptions are: reliability; self-motivation or just motivation; dedication; dependability; attitude, competency and discipline.

The ability to show initiative was emphasised a number of times: initiative/using common sense/thinking outside the box; working under no supervision; workplace initiative; initiatives/judgement; and ability to see small details. Other important personal skills identified by employers as desirable are: confidence/professionalism; willing to learn; consistency in effort and application of the skills; able to think long-term (planning).

Tourism training needs analysis 2009

The 2009 Tourism Training Needs Analysis identified the highest priority training needs of the sector as: customer service; reception, including front office, bookings, dealing with complaints; tour guide refresher; food and beverage service (including barista); housekeeping fundamentals; first aid and advanced first aid for marine operators and staff; boat skipper/ boat master; outboard and inboard engine maintenance and refrigeration; and running a small business.[32]

10. Information and communication activities

The two enterprises in this sector are large employers with a range of technical skill needs. The Tonga Communications Corporation needs in particular electrical engineers, information technology and computer science skills; and skills related to revenue assurance & quality auditing. Generic skills needed relate to providing good customer services and communication skills.

[32] NZAID Tonga Tourism Training Needs Analysis, Draft Report, 11 September 2009, p 2.

The Tonga Broadcasting Commission needs skills in journalism & media; radio & TV production; visual TV editing and radio & TV presenters. The generic skills sought are: basic English grammar & spelling; knowledge of basic Tongan words & proper grammar & meaning; ability to pronounce properly English & Tongan words; basic media skills in news & program production; basic work ethics & attitude; and commitment & loyalty.

11. Financial and insurance activities

Five enterprises surveyed provide financial services such banking services, accounting and a range of insurance products. Two are large and three are small enterprises, covering in total 125 employees. The most important formal qualifications for working in this sector are related to accounting and finance. The types of skills needed are: working accounting skills, cashflow/business analysis.

The general skills needed are: in addition to basic administrative skills, customer service skills and communication skills are important. Particular reference was made to the obstacle to internal communication between management and workforce created by deference to the cultural hierarchy. Also important are: having the right attitude, being a team player; having problem solving skills and commitment.

13. Professional, scientific and technical activities

This sector includes only one enterprise focusing on printing activities. The required technical skills are: management skills; computer skills; print finishing skills; and data composition skills. Also important are: customer service skills, and marketing skills.

Type of training needed

All of the nominated skills needs were classified into whether training could address the need and if so, what sort of training. The categories of training are technical of the kind provided by TVET, short courses, in-house training or basic skills. The category of basic skills refers to those attitudes and values that employees bring to the workplace as well as foundational skills in literacy and numeracy, basic skills in how to use a computer. These basic skills also include English language ability, as it is the language of instruction in the school system. As one employer commented:

> *When recruiting we look mainly for attitude, work ethic & honesty. We can train anyone who has the right attitude. Often we struggle to find applicants that truly understand a business environment & the expectations we have.*

These basic attributes expected of employees include honesty, self-motivation, willingness to learn, dedication and initiative cannot be easily acquired. This means they are difficult to inculcate through formal training as they are usually considered part of a person's personality.

Need for short courses

Many of the skills identified by employers (about two in five of those mentioned) can be addressed by short courses supplemented by on-the-job mentoring. These skills include learning how to operate equipment and large machinery such as bulldozers, other heavy

equipment such as cranes and forklifts. It also includes jobs like bar attendant, kitchen hand, food processing skills and housekeeping. These require some front-end formal training but are mostly learnt on-the-job, under a supervisor.

Knowledge of quality and health and safety standards can best be imparted through short courses followed by monitoring of performance in the workplace. The oft mentioned need for skills in communication, customer service and time management can also be met by short courses backed by on-the-job mentoring. Supervising skills can also be learnt through a combination of short courses and on-the-job mentoring once an employee shows a basic aptitude for taking a leadership rôle. Other skills can also be best learnt through in-house training as they only involve skills needed in the enterprise. This applies to product knowledge in relation to engine spareparts or hardware building supplies. Issues related to work behaviour such as being on time, promptness and absenteeism can only be addressed by changes in the workplace such as providing feedback or incentives to change behaviour.

Extent of skills gaps in the workforce

Only two enterprises said that none of their workers had the skills to do their job (both in tourism and hospitality). However, another 30 enterprises, out of 105, said that only some of our workers have the skills needed to do their job. So gaps in the skills of the workforce exist for near to a third of enterprises. There is little difference in the median employment size of the businesses with a skills gap and those without. The largest group of businesses (28 per cent) with a skills gap in their workforce are to be found in accommodation and food services. Next come businesses in manufacturing; agriculture; wholesale and retail trade, including repair of motor vehicles and motorcycles; and transport and storage. One factor is rural location. Near to half of the enterprises (44 per cent) with a skills gap in the workforce are in rural areas.

Annex 3

Table A3.1: Ratings in terms of importance to employers of ten issues they face, Survey of the Skill Needs of Employers in Tonga, 2012

Most important issue business faces	Rating
Finding skilled workers	4.4
Government regulations	4.3
Business permits	4.2
Lack of good work habits among our workers	4.2
The tax system	4.2
The electricity supply	4.0
The state of the roads	3.9
Access to credit or finance	3.6
Problems with suppliers	3.5
The cost of foreign workers	2.7
N	105

Table A3.2: The type of generals skills identified by employers as needed by their employees, per cent

Which set of skills does your business find hardest to recruit? Please list them in order of importance to the work of your business					Jobs now	Main activities of business
Ticketing	Tour conductor				2	Ticketing/In-bound Tours/Transport
Tour guides on land	Scuba diving guide				2	Whale watching, scuba diving, boat tours
Supervisors	Housekeeping				2	Accommodation
Seafarers	Chef	Accountant			2	Fishing (Deep Sea)
Customer service	Cooking	Housekeeping			1	Hospitality services - accommodation
Technicians, Electrical Linesman	Engineer levels with specific skills gaps	Project Engineer	System Control-lers	Project Manager	1	Sole supplier & Distributor of Electricity in Tonga
Sales person	Handicraft producers (I mostly train them)	Web designer			1	Art & Crafts
Chef					1	Accommodation and restaurant services
Manage-ment skills	Technical skills - computer skills				1	Facilitating cargo movement
Air traffic controller skills	Technicians/Commer-cial skills	Flight procedures design	Quality & safety managers	Rescue fire/Avia-tion security	1	Airport management
Supervisory experience	Inventory	Directing Customers	Writing reports	Concrete work	1	Quarry supplies, gas station
Knowledge of paints	Knowledge of sales & projects	Color mixing	Paint making		1	Retail & wholesale of paint & related items
Team work and coordination	Supervision skills	Communica-tion skills	Customer service	Initiative	1	Logistics and Warehousing

Table A3.4: Proportion of construction workers with post-school qualifications, per cent and total number

Construction workers	Per cent with ps qual	N
Building frame & related trades workers	**6.3**	1201
Building finishers & related trades workers	**18.2**	143

Table A3.5: Type of training needed for general & specific skills identified by employers, enterprise skill needs survey 2012, per cent

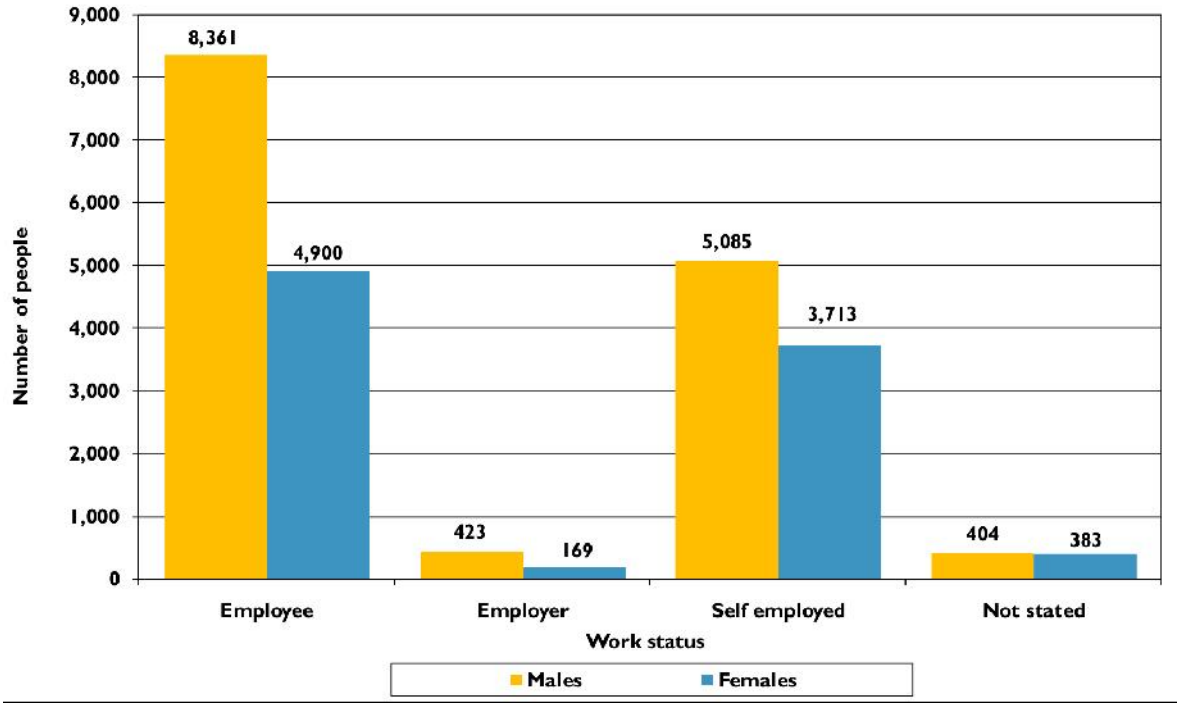
Type of training	per cent
Basic skills brought to workplace	16.9
Short courses	42.0
In house	7.6
Technical skills - TVET	32.3
Other	1.2
	100
N	486

Chapter Four: Needs of the Informal Economy and the Rôle of Training

An important distinction needs to be made between formal and informal employment. Formal employment refers to work that is covered by and responsive to regulations set and enforced by government. It usually refers to paid work for employers who are registered as businesses with government and who pay taxes. Informal employment refers to work that produces goods or services for sale or own consumption that is not subject to any legal requirement about how the activity is conducted.

More people in Tonga earn an income from the informal economy than the formal economy. Over half (56 per cent) of adults in 2003 were working in the informal economy. Wage and salary earners accounted for only 44 per cent of total employment in 2003. The 2006 census showed that 39 per cent of those in employment were self-employed, with a slightly higher proportion for women (41 per cent) (see Figure below). The second most common source of household income during the 12 months prior to the 2006 census was selling products such as fish, crops or handicrafts (29 per cent) after wages and/or salaries (43 per cent of household incomes). However, only small proportion (7 per cent) of households relied on income from their own business.[33]

Figure 41: Paid workers by work status and sex, Tonga: 2006



Skills training for the informal economy refers to either ways to improve sustainable livelihoods or to create income-earning opportunities. Skills shortages in the informal economy refer to the lack of knowledge, skills and attitudes to take advantage of available opportunities to earn cash. Subsistence farmers and those reliant on fishing for their

[33] Tonga 2006 Census of Population and Housing, Volume 2: Analytical report/Statistics Department, Government of Tonga, p 55.

livelihoods, under the pressure of a growing population, need to learn better ways lift their crop and fish yields and nutritional quality as well as make sure of new ways to keep food in storage with minimal loss. The Skilling the Pacific Report (2009) noted that skills training is essential for promoting sustainable livelihoods in the Pacific. Where environments are fragile, people need to know how to manage better their available resources.

Skills training in most countries is geared to preparing people for work in the formal economy and to meeting the needs of enterprises providing this employment. Providing training for the informal economy suffers from a number of challenges. These include the lack of adequate resources and the means to provide training such as suitable trainers to the agricultural and urban informal economies. Low levels of literacy and numeracy of many of those making a living in the informal economy are another challenge.

Also, identifying the need for training in the informal economy is not as simple or easy to do as it is in the formal economy. Different methods of identifying the needed skills to those used in the formal economy are required. Training is only part of the support needed to help people generate incomes. In relation to income-earning opportunities, for example, considerable effort has to go initially into collecting relevant information from 'key informants' about what are the available economic opportunities and then to work out what skills needed to make a success of these activities. These key informants need to be acknowledged experts, and be willing to pass on their knowledge.

Skills training relevant to an identified opportunity also has to include training in running a business such as how to manage money. Access to microfinance, and marketing services are also likely to be needed. Continuing business advice is another form of support that will increase the chances of success. This post-training support should be designed and managed by people with business experience and skills, and not civil servants or trainers. Follow-up of the impact of the training and support services is also needed to see how effective it is in terms of generating income.

Outline of this chapter

The main focus of this chapter is to present the results of a survey of 57 people engaged in activities in the informal economy. This is followed by a discussion of the training needs of women in the informal and formal economies.

Survey of people earning income in the informal economy

A special survey was conducted in early to mid November 2012 for the review of the Tongan labour market. The survey was carried out in the islands of Eua, Ha'apai, Vava'u as well as on Tongatapu. The villages were selected to fit one of four types, based on their main source of income or livelihood or location: farming, fishing, tourism or urban fringe. People in each village were invited to answer four questions and so the responses are from people who offered to take part in the survey.

Some 24 villages were selected. The numbers of people interviewed in each location were: Eua (7), Ha'apai (8), Vava'u (29) and Tongatapu (13). The main economic activity of nearly half the villages surveyed is farming, tourism is an important source of income for a quarter of the villages, one-in-six villages are on the fringe of an urban area and just over one-in-ten are reliant on fishing.

The survey was designed to avoid asking people directly whether they wanted training. As noted above, the forms of support needed for activities in the informal economy are usually more varied than simply offering training. The approach sought to determine if training emerged as an unprompted suggestion for the sort of help needed to conduct their income generating activity.

The four questions asked were:

> [Q1] what do you do to gain regular income? what is your main activity for earning an income?
> [Q2] what do you think you would like to do to improve your income generating activity?
> [Q3] what types of help would you need to do this?
> [Q4] what other ways/other opportunities do you think you could use to earn some income?

Main income-earning activities

The most important activities to earn an income are: handicrafts as part of a cooperative venture; farming, handicrafts as a solo activity, fishing and animal husbandry. The cooperative handicraft work involves growing pandanus leaves, harvesting, preparing the leaves for weaving and weaving the handicrafts. Some very large mats are valued at TOP 2,500 and above. In one case, three women were full-time weavers of high-quality products for export to international buyers. In one month, they can make enough income for a year. One woman was the finance officer and business manager. Four husbands harvested the pandanus leaves and prepared the material. In other cases, handicrafts were sold at local stalls (fale) or in stores.

The most important activity in the villages based on farming is growing crops, with some animal husbandry and cooperative handicraft making. This can refer to growing vegetables and a few root crops to get sufficient to feed an extended family group and to exchange the vegetables for fish. In other cases, farming included growing a range of crops for export such as kava and vanilla. In other cases, the farming focused on growing food crops for local consumption such as taro and melons. Another means of earning income was to raise beef cattle for sale at local markets and for produce to go to Tongatapu markets.

However, in the fishing villages, the income-earning activities are more diverse. They included cooperative handicraft-making, diving, solo handicraft-making, fishing, farming, housekeeping, cooking and shopkeeping. Fishing two or three times a week was both to help feed the family and also for sale in the local village sale/income. The diving was for bêche-de-mer (sea cucumbers) to be sold as commercial seafood produce.

In the villages, dependent on tourism, cooperative handicraft-making is the most important activity, with some fishing, farming and solo handicraft-making. In the villages on the urban fringe, the most important activities are cooperative and solo handicraft-making.

The activities involved a mixture of ventures run by male entrepreneurs (commercial vegetable growing - vanilla, kava, yams and taro), household-based activities (wage earner plus crafts/pigs or stall), male-led activities (fishing), group-based male and female activity (traditional mat weaving, including growing, harvesting and preparing the matting by the men), and group-based female activity (weaving group), and female-led activities such as

home-based crafts and piggery and arts & handicrafts.

Suggestions to improve income-generating activities

Some 44 suggestions were offered. The most important were: handicraft equipment (8); expand/secure market (6); and fence/security (6). Other suggestions were: reduce regulation (5); and improve transportation (3). Expand crops (2), better market prices, hire more employees, and feed animals were each suggested by two people. Single mention suggestions were: more land, office/office equipment, farming equipment, better organisation, start new business, access to utilities, more animals, and boat/fishing equipment.

Table 4.1 Suggestions to improve income-generating activities by type of village

Farming-based villages	N	**Tourism-based villages**	N
Expand crops	5	Boat/fishing equipment	3
Farming equipment	2	Handicraft equipment	1
Start new business	2	Expand/secure market	1
More animals	2	Improve transportation	1
Handicraft equipment	1	Expand crop	1
Expand/secure market	1	Start new business	1
Fence/security	1	**Villages on urban fringe**	
Better market prices	1	Expand/secure market	4
Hire more employees	1	Fence/security	1
Feed animals	1	Reduce regulation	1
More land	1	Farming equipment	1
Better organisation	1	Start new business	1
Access to utilities	1	Boat/fishing equipment	1
Fishing-based villages			
Expand/secure market	2		
Boat/fishing equipment	2		
Office/office equipment	1		
Better organisation	1		
Start new business	1		

Specific responses to Question 2 included raising more animals for sale: growing and selling more pigs - currently need several breeding sows and secure compound to retain animals. Other suggestions focused on exports crops: ‘need to create more local & overseas markets to sell the vanilla to’; want to grow more cash crops such as tobacco; ‘export crops overseas and sell them locally as well’. Another way to improve income was by contracting out services in farm land preparation by using a tractor to plough fields. One farmer was growing vegetables commercially for local markets, employing six permanent workers. He wanted to improve his operations so he could export high-value root crops in cold containers to New Zealand markets.

In relation to handicrafts: ‘grow more pandanus trees’ to allow more weaving for overseas sales; ‘get the right equipment and resources and recruit more skillful people’; ‘gain better access to markets for woven/handicraft products’; and ‘increase the frequency of international sales’. Several of those earning income from fishing wanted to buy their own boat for fishing in preference to the high cost of hiring an available boat. They could sell all of their catch but the cost of hiring the boat meant they could only fish two or three times a week.

Type of help needed

A follow-up question was asked what types of help would you need to do this. The leading type of help suggested was 'funding/loan' (9); followed by training/education (8); secure markets/improved marketing (8) and improved road and transportation (7). Other types of help suggested were: a fence/security for animals (5), subsidies (4), get family members/friends involved (2); and cheaper equipment/supplies (2). One-off suggestions for help were: better selection of crops/animals, reduce regulation, information on markets, and conservation.

The tourism-based villages and the villages on the urban fringe were the most likely to mention training/education as the type of help they wanted. In the farming-based villages, more important types of help suggested were: funding/loan, improved road, secure markets/improved marketing, fence/security, and subsidies. In the fishing-based villages, funding/loans came first, followed by training/education, secure markets/improved marketing and impact of new regulations.

On the issue of the negative impact of new regulations, an elderly leader of a local fishing community made the point that for a large number of local fishermen, new ecosystem regulations aimed at better environmental management of fisheries has resulted in the collapse of many household incomes due to over-regulation. He stated that the Ministry of Fisheries needed to understand better the impact of the new regulations and review them because the new requirements were currently catching the wrong players and hurting poor families.

The final question was 'What other ways/other opportunities do you think you could use to earn some income?' The responses were: handicrafts (6), training/education (5), fishing (4) get family member involved (3) new business (2), funding/loan (2), stop pests (2), fishing equipment (2), and feed for animals (2). Single responses were: sell overseas, farming equipment, farming, grow more crops, better selection of crops/animals, cheaper utilities and expand markets. The farming-based urban fringe villages were most likely to favour the use of training/education to help them earn some income.

Some specific requests for training were to seek skilled training in diving and better equipment to dive safely for bêche-de-mer (sea cucumbers) as the person was self-taught and was using basic equipment. The commercial grower of vegetables wanted on-the-job training for his farm workers to apply improve techniques for skinning taro and preparing it for export. The weavers of large traditional mats using prepared and treated pandanus fibre wanted to maintain skills of the group and induct young girls as weavers and provide on-the-job training.

Women and the informal economy

Women dominate two activities in the informal economy: the making of textiles and handicrafts. The 2003 labour force survey showed that 98 per cent of those who made textiles were women (4,319) and 92 per cent of those made wood products, except furniture and straw and plaiting articles were women (3,009). The 2009 Household Income & Expenditure Survey showed that 40 per cent of rural household subsistence income came from handicrafts. The production of handicrafts is vital to the survival of rural households.

In agricultural activities, the rôle of women in producing food is often not recognised in official statistics. The 2003 labour force survey records only 407 women compared with 9,128 men growing of crops; market gardening; and in horticulture. And yet, it has been noted that women (and children) take part in virtually all other farming jobs like planting and planting preparation, harvesting and post-harvest processing.[34]

It is clear that women are involved in a wide range of activities in the informal economy. These include subsistence and commercial agriculture, fishing, weaving and tapa-making, trading and small-business activities. A 1998 report entitled *Women in Tonga* described the range of activities women were involved in agriculture:

> *In principle, women manage and control the cultivation of vegetables, fruit trees, and a wide range of medicinal, cultural and ornamental/fragrant (often multi-purpose) trees/plants in the immediate vicinity of the household ('api kolo). In addition, they are responsible for the cultural and income-generating handicraft species like the paper mulberry (hiapo) and pandanus, which usually grow in the male bush garden area ('api 'uta). They assist with the cultivation of food crops in the 'api 'uta, usually weeding and harvesting, and they contribute to the commercial farming of vegetables (and other crops like peanuts) at all stages after the land is cleared. They also feed the pigs and raise the chickens. Men are responsible for tree/plant/crop species (with the exception of handicraft plants) in the 'api 'uta including staple root crops and multipurpose trees like coconut, mango and breadfruit.*[35]

In the production of commercial crops such as squash, vanilla and coffee, women have played key roles in the production, processing and preparation for export of these products.[36] As noted above, the production of handicrafts is a major source of income for rural households. Women have traditionally played the key rôle in this activity, from the growing of the raw material, a variety of pandanus and paper mulberry (hiapo) trees, to the final production of high-value weaving or tapa cloth and its marketing.[37]

Women's rôle in generating income from fishing activity has also not been recognised adequately or supported. For the coastal communities, landless families and low-income households in urban fringe villages, gathering shellfish and women's inshore fishing remain important sources of food and income. Tongan women also engage in various post-harvest activities ranging from simple gutting, scaling and cleaning of shellfish to using processing and preserving methods like salting and drying. It has been suggested that women involved in fishing activities want to develop their skills and knowledge in fish preservation and processing.[38]

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[34] Atu `o Hakautapu Emberson -Bain, 1998, Women In Tonga: Country Briefing Paper, Asian Development Bank, December, p 53.

[35] `Atu `o Hakautapu Emberson -Bain, 1998, p 53.

[36] `Atu `o Hakautapu Emberson -Bain, 1998, p 53-56.

[37] `Atu `o Hakautapu Emberson -Bain, 1998, p 56.

[38] `Atu `o Hakautapu Emberson -Bain, 1998, p 59.

Women in business

Women In Sustainable Enterprises (WISE Tonga Inc) conducted a survey of the training needs of a third of its 167 members. The resulting 'Report on Training Options for the Members of WISE Tonga Inc. August 2012' by Janet Carlyle described the typical current member of WISE as a woman, aged between 26 and 65, who is employing between 1 to 15 staff. She started her business, or businesses, (many members of WISE have multiple businesses), out of economic necessity, but did not use micro finance to fund her start up or to expand. Many members of WISE have a formal business plan in place.

The current membership of WISE is split, half and half between women who have businesses in the formal and informal economy. Informal businesses are defined as those businesses not earning enough income to pay the lowest level of business tax set at $7,400 per year.[39]

A survey of 47 WISE members that identified and prioritised their general areas of training they wanted. The results are presented in the graphic below. Training and skills in Tourism was the most important area of training identified. This was followed by interest in training in business ethics, planning and staff management. A third of respondents were interested in obtaining skills in either corporate governance and or political governance.

[39] Janet Carlyle, 2012, Report on Training Options for the Members of WISE Tonga Inc. August, p 5.

Conclusion

Earning a reliable income in the informal economy depends on having the appropriate resources as well as skills. The latter are usually passed on within the household or the wider community. However, finance is often needed to purchase the equipment needed to undertake the activity more cost effectively. This applied to fishing in particular but also to raising animals. The cost to market was also another barrier to selling produce. After these factors, training did get mentioned as a way of improving the capacity to generate incomes. However, the need for training was a specific one, often related to on-the-job training rather than formal classroom-based instruction.

Not mentioned by respondents was the need for training in financial literacy. This is likely to be important as several people wanted to take out a loan to purchase equipment such as a boat for fishing, safety equipment to allow off-shore fishing or other equipment such as attachments for a tractor. Also needed are skills in managing a business, marketing and closing a sale.

The 'Know Your Business' training programme has been developed by the International Labour Organisation (ILO) for trainers and teachers in vocational education, secondary education and also higher education.[40] It is a 80 to 120 hours course for young students between 15 to 18 years. Its aim is to promote awareness among young people of the opportunities and challenges of entrepreneurship and self-employment. The training programme provides the knowledge of the challenges and the desirable attributes needed to start and operate a successful enterprise. The ILO's Start & Improve Your Business (SIYB) training programme is aimed at local Business Development Service organisations, and especially women's organisations. It teaches people how to generate an idea for a small business, how to start it up and how to improve a business over time.[41]

However, these programmes will have little impact unless a range of support services is also provided. Training which raises expectations about the potential of self-employment has to also acknowledge the challenges and barriers that exist to undertaking any activity aimed at creating a reliable income.

The informal economy in general is under-reported in official statistics because simple questions at one point-in-time cannot provide answers to the nature and extent of people's economic activities. In particular, the rôle of women in the informal economy is often difficult to identify from official statistics because they understate the economic contribution they make beyond the household. One informal activity of women that makes a large contribution to the incomes of rural households is traditional weaving and tapa cloth making. Forms of support needed include ensuring that sufficient supplies of raw materials are available, assistance with marketing to international clients and help with managing finances. Also needed is a focus on ensuring these traditional skills are passed onto a younger generation of women.

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[40] International Labour Organisation, 2011, 'Know About Business' (KAB): A training methodology to create awareness about entrepreneurship among youth Factsheet.
http://www.ilo.org/employment/DepartmentsOffices/rural-development/WCMS_159163/lang--en/index.htm

[41] Fact sheet of 'The Start and Improve Your Business Programme (SIYB)'
http://www.ilo.org/empent/Publications/WCMS_101309/lang--en/index.htm

Chapter Five: Forecasting future demand for middle skills

The issue of how to forecast future demand for skills is a complex one. It is not possible simply to take past trends and project them into the future. Sector forecasts of workers with specific technical skills was popular in the the 1960s and 1970s but were rejected in the 1980s due to the rigidity of the method used.

> *Manpower planning generally assumed a fixed relationship between labor and outputs, implicitly ruling out technological change. It also emphasised technical skills to the detriment of cognitive and social skills. And it was slow to adapt to rapid changes in the world of work...*[42]

The OECD's major review of TVET in 2010 called Learning for Jobs noted that:

> *...the shape of future labour market needs is inevitably misty. The challenge is to identify what can reasonably be predicted some years into the future, and what cannot.*[43]

The World Bank concludes its note on the limitations of manpower planning with this comment: '...perhaps the most valuable lesson from East Asian countries is that skills-development systems need to grow organically from below while being coordinated and fostered from above'.[44]

In a small economy, reliant on government and donor expenditure, predicting the future demand for skills often depends on decisions made by the government. A good indicator of skills demand for the short-term future is information about planned investment in infrastructure and other major projects. The local demand for skills training is also shaped by government approvals of work visas for foreign workers and on whether there is a policy to replace foreign workers. Government policy on limiting the size of the public sector also has a direct effect on whether retiring workers are replaced or not.

The skill requirements of infrastructure projects are also open to government intervention. What types of skills needed to do the work and how these skills will be sourced can be specified as a requirement of the tender process. Enterprises submitting a tender could be asked to provide details of the types of skills to be created, the required training for these skills, the numbers of persons in jobs using these skills, and whether the skills are to be recruited domestically or not. If foreign skilled workers are to be used, enterprises could be asked to make arrangements to ensure that skills are transferred to local workers. These arrangements should include partnerships with skills training providers or providers, to provide structured work placements for students and new graduates, and other forms of assistance in terms of personnel and equipment for training providers.

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[42] World Bank, 2012, World Development Report 2013: Jobs. Washington DC, Box 5.8, p 177

[43] OECD, 2010. Learning for Jobs: Synthesis Report of the OECD Reviews of Vocational Education & Training. p 57.

[44] See Note 39.

Employment situation over previous 12 months to November 2012

Employers were asked about their jobs record in the previous 12 months and their employment situation in the immediate future. In response to the question: 'Has the number of your workers changed in the last 12 months compared with the previous year?', over a third of employers (33 per cent) said the number of their workers had increased, just over one fifth quarter (22 per cent) said it had decreased and two-in-five (42 per cent) said it had remained the same (see Table A5.1).

The smaller employers (average number of employees 22) had not changed their employment numbers in the last year. The larger employers (average 31-32 employees) had either increased or decreased their employment.

Industry changes in employment

Table A5.1 shows that the industry sectors that increased their employment more than the national average are: Agriculture, forestry, fishing; Mining and quarrying; Financial and insurance activities; and Construction. The industry sectors which performed below the national average were: Wholesale and retail trade; repair of motor vehicles and motorcycles; Manufacturing; Transportation and storage; and Information and communication activities.

The sector with the largest number of employers is hospitality and tourism. The majority of enterprises said they had not increased their number of employees in the last 12 months. A third said they had increased their number of jobs; and one-in-ten had decreased their number of employees.

The two industry sectors which stand out as contributing major employment growth are: agriculture, forestry and fishing and finance and insurance services. Construction and mining and quarrying have also contributed in a smaller way to the employment growth. In agriculture, forestry and fishing, the main activities which have expanded employment are: forestry and timber production, deep sea fishing; processing and export of agriculture products, such as vanilla. Supplying quarry products has also expanded its employment.

The main types of activities expanding in the finance and insurance sector are: general Insurance, microfinance which provide access to loans, savings, life insurance, business training and financial literacy training to low-income, self-employed or unemployed women in Tonga; and a firm providing services in accounting, audit and taxation.

The results for the construction sector show that some firms have expanded and some have contracted. Four firms have increased their employment in the last 12 months, three have decreased their number of workers and 2 firms have kept the same level of employment. This sector is particularly dependent on the funding of specific projects. The four construction firms which had expanded in the last 12 months were all located in Pahu, Ma'ufanga, Haveluloto.

The tourism and hospitality sector also has 11 out of 32 enterprises which increased their employment in the 12 months to November 2012. Four out of 14 enterprises in the sector covering wholesale and retail trade; repair of motor vehicles and motorcycles increased their employment over the last 12 months.

In terms of decreased employment over the last twelve months, the major sectors are: mining and quarrying; information and communication activities; manufacturing; water supply; sewerage, waste management activities; construction; and wholesale and retail trade; repair of motor vehicles and motorcycles; and transportation and storage.

Manufacturing is the sector with the most enterprises (5 out of 11 surveyed) that have decreased their employment over the last 12 months. Three constructions firms decreased their employment in the last 12 months. Four out of 14 enterprises had decreased their employment in the sector covering wholesale and retail trade; repair of motor vehicles and motorcycles.

Expectations about jobs expansion in the immediate future

Employers had lower expectations of increasing the number of their workers in the next three months. Only one-in-four (24 per cent) believe that they would have more workers in three months time compared with the third of enterprises that increased their employment in the last 12 months (see Table A5.2). Three-in-five (60 per cent) believe they will have the same number of workers and one-in-six (16 per cent) said they thought they will have fewer workers.

The largest employers (average 44 employees) think the number of their workers will remain the same in three months. Mid-sized employers (average 34 employees) think their numbers will remain the same. However, smaller enterprises (average size 16 employees) think that they will have fewer workers in three months time.

The industry sectors which are optimistic about increasing their number of workers over the next three months are shown in Table A5.2 Enterprises in agriculture, forestry and fishing stand out as the most optimistic about future job growth, with five out of the six saying they expect to increase their number of workers in the next three months. Construction has three-out-of-ten firms which expect to increase their workforce. Manufacturing has three out of 11 firms also expecting to increase their workforce.

These results show that employment growth, or the demand for skills on which it is based, cannot be predicted on the basis of conditions in an industry sector. Except in the case of agriculture, forestry and fishing, the expectations about future employment vary greatly by enterprise within most sectors.

Difficulties with forecasting the future based on past trends

The difference between actual job growth and expectations about future job growth shows how difficult it is to forecast the future in terms of past trends. Only a third (34 per cent) of the enterprises that increased the number of workers in the last 12 months said they expected to further increase the size of their workforce in the next three months. Of those enterprises that decreased their workforce in the last twelve, a quarter (26 per cent) expect to continue to lose workers in the next three months. However, a fifth (21 per cent) of this same group of enterprises that lost workers in the previous 12 months expect to increase their workforce in the next three months. Three-out-of-four enterprises with the same number of workers over the latest 12 months expected this situation to continue, with near to one in six (14 per cent) saying they expect their number of workers to increase and just over one in ten (12 per cent) saying they expect to have fewer workers.

Estimating the potential of replacement demand for middle-level skills

In a small economy with slow private sector growth and constraints on public spending, the potential demand for middle-level skills is shaped much less by the growth in jobs (expansion demand) and much more by the replacement of existing workers (replacement demand).

Replacement demand is caused by several factors. One factor is the aging of the workforce in an occupation and people leaving the occupation on retirement. However, replacement cannot be automatically assumed to take place. The decision, especially in the public sector, to replace a retired worker may depend on the current budget situation. Nevertheless the number of people who are aged 55 or over can be used as one source of information on replacement demand. Table A5.3, in the second data column, shows the number of workers in each occupation who are likely to retire in the next five years.

Another factor affecting replacement demand is the number of foreign workers in an occupation. If an employer can find people in the domestic labour market with the desired set of skills, then it is more cost efficient for the employer to replace the foreign worker. Employers go to the trouble of bringing in foreign workers at considerable cost because Tongan workers do not have the necessary skills to do the job. The government approval of a work visa is based on an assessment that Tongan workers with the same skills are not available to work. In particular, the middle occupations with a high proportion of foreign workers can indicate a domestic skills shortage in that occupation.

The availability of census data on the occupations of foreign workers and their qualification profile compared with Tongan workers provide a valuable way to measure the potential domestic demand for middle-level skills training. These data can be used to identify the replacement demand and the skills gap in the existing workforce.

Demand based on filling skills gaps in middle-skill occupations

Another source of demand for middle-level skills is the need to upgrade the skills of existing workers. Most jobs in the occupations classified as technician level require a post-school qualification. For the associate professional occupations, the skills required may be reflected in post-school qualifications or may be learnt on-the-job.

For the trade-based occupations, a qualification based on classroom training and on-the-job training is regarded as highly desirable by employers in international labour markets, especially where trades workers are accountable for meeting minimum standards. However, in developing countries formal qualifications in these occupations are much less common.

Working out a benchmark for qualifications in middle occupations

The proportion of foreign workers in an occupation with post-school qualifications provides a valuable reference point or benchmark to show what minimum set of qualifications employers are seeking. If an employer has gone to the considerable extra cost of engaging a foreign worker with post-school qualifications, then it can be assumed that the employer believes that this level of qualification is desirable for that occupation. The gap between the qualifications profile of Tongan workers compared with foreign workers shows the number of the latter who potentially need middle-level skills training.

Estimates of potential replacement demand and demand to fill skills gaps

Table A5.3 in the annex to this chapter provides data to measure the skills gap in a range of occupations. These occupations have been chosen because they are serviced by existing post-secondary training providers in Tonga (eg accountancy for finance professionals); or they cover middle occupations (eg associate professionals and technicians) that are usually serviced by TVET providers.

Table A5.3 provides information in data column 1 on the current of job holders in an occupation at the time of the 2011 census. This information is important to training providers because it shows the upper limit on the demand for that occupation in Tonga. For example, the table show that there are 126 Information and communications technology operations and user support technicians and 53 Telecommunications and broadcasting technicians. Providing training places for a diploma in information and communications technology in excess of these numbers means that graduates have to be able to find work with this qualification in overseas labour markets.

The second data column shows the number of job holders who are aged 55 years and over. The third data column shows the number of foreign workers in that occupation. A large number of foreign workers in an occupation can be taken as evidence of a shortage of skills from domestic sources. Data column 4 and 5 show the proportion of Tongan workers and foreign workers with a post-school qualifications. The final column in Table A5.3 shows the number of Tongan workers in each occupation who would need to acquire post-school qualifications to reach the share held by foreign workers.

To give some idea as to how these data can be used to identify the need for training, the following Table 5.1 shows the occupations with the largest number of Tongans with post-school qualifications compared with foreign workers.

Table 5.1: Summary information on number of Tongans without a post school qualification compared with foreign workers in each occupation, Tonga 2011

Occupations supplied by post-secondary providers in Tonga	Tongans without quals	Occupations supplied by post-secondary providers in Tonga	Tongans without quals
Building frame and related trades workers	110	Nursing and midwifery professionals	62
Regulatory government associate professionals	104	Food processing and related trades workers	49
Machinery mechanics and repairers	87	Physical and engineering science technicians	48
Financial and mathematical associate professionals	83	Ship and aircraft controllers and technicians	48
Other clerical support workers	78	Secretaries (general)	47
Administrative & specialised secretaries	70	Cooks	43
Finance professionals	69	Engineering professionals	34
Information and communications technology operations and user support technicians	67	Electronics and telecommunications installers & repairers	31

Identifying emerging skills needs

Government goals and targets for infrastructure investment offer a guide to emerging skills needs. Current and future planned or proposed large projects require skills over and above the normal requirements of a low-growth economy. However, it is not possible to apply a set template to work out the domestic skill needs of a specific project. This will depend on the particular uses of technology the successful tender applies, the forms of work organisation they deploy and the skills of their core workforce they will import for the project.

Current and proposed projects that have implications for the supply of middle-level skills. The Tonga National Infrastructure Investment Plan 2013: Draft for Discussion uses four strategic themes to list the projects which have high priority for future infrastructure investment.[45] These four themes are: Connecting Tonga; Improved Infrastructure for Communities; Reliable and Affordable Energy; and Sustainability, Resilience and Safety. The projects where a need for middle-level skills can be identified are outlined below.

Telecommunications

The completion of an undersea fibre-optic cable link to Fiji is scheduled for mid 2013. The draft Tonga National Infrastructure Investment Plan 2013 points out that this cable will deliver a step-change in the speed of communication, as well its capacity and quality. The improved communications have the potential to create a range of new economic and social opportunities. In addition, infrastructure and services of the local telecommunication operators in relation to telephone, radio, and the Internet are also being improved to offer new applications such as mobile Internet, multi-media and interactive applications. Efforts are also being made to improve mobile phone and AM radio coverage in less-populated islands.

A proposed project is to extend the fibre-optic cable link to connect Ha'apai and Vava'u with international networks. However, the draft plan notes that the private sector and Government need to build on opportunities emerging from improved Internet access, and follow-up with initiatives that provide e-commerce and e-Government services: ‘these follow-up activities are critical to maximising the national benefits from investment in the cable’.[46] The skills required to operate e-commerce and e-Government services include: web and multimedia developers, graphic designers applications programmers, database designers and administrators, computer network & systems technicians and web technicians.

The second investment priority for this sector recommended in the draft plan is to improve the resilience of the AM radio system so it can better perform its role as an early warning system for cyclones and in providing vital information during disaster recovery. This would involve construction of a new transmitter tower on Vava'u and climate proofing of transmission facilities and studios in Tongatapu and Vava'u. A new transmission tower on Vava'u would address reception problems on northern islands, especially during cyclones and emergency situations.

The skills needed are: telecommunication engineers, electrical engineering technicians Electronics engineering technicians Electrical line installers and repairers Electronics mechanics and servicers.

[45] Tonga National Infrastructure Investment Plan 2013: Draft for Discussion, 14 December 2012, p 25.

[46] Tonga National Infrastructure Investment Plan 2013: Draft for Discussion, 14 December 2012, p 13.

Road repair and maintenance

Transport Sector Consolidation Project is upgrading Tonga's road system after a decade of neglect. Specific projects are the Nuku'alofa Reconstruction Project, the Integrated Urban Development Sector Project; the Tonga National Road Improvement Project; and the AusAID/World Bank Transport Sector Consolidation Project. There is also ongoing road maintenance.

According to a 2011 report assessing road construction and maintenance services in Tonga, there are about six or seven professional engineers in the private sector, spread between contractors and consultants. There are also some 50 engineering contractors on Tongatapu, most with experience in quarry operations or building projects.[47] Many contractors have a depth of experience in tendering, scheduling and contract administration of building works.

The report recommended the movement of road maintenance function from government to the private sector. In relation to 'manpower skills', the report noted that:

> *'... existing consulting groups and contractors that have the capacity to design, supervise and carry out road building and maintenance. However, some strengthening of tender preparation and estimating skills would be helpful. Likewise, initial strengthening of contract preparation and project management skills within government agencies would allow them to more effectively control operating contracts'.*[48]

The draft Infrastructure Report identified the main obstacle to improved roads is the backlog of maintenance and the need to rehabilitate the road system to a standard where it can be sustainably maintained in a cost-effective way using local resources and expertise.

Water and Sanitation

The growth in the population of Nuku'alofa and peri urban settlements is lifting the demand for better access to water supply and water quality. The water agency, the Tonga Water Board, also has to monitor and safeguard water sources.

Another challenge is reducing loss and waste of valuable water. More can be done by the Tonga Water Board and village water supply managers to promote responsible use of water through demand-side management initiatives similar to the energy sector. This involves undertaking measures such as helping households to reduce water leaks; encouraging or mandating the use of water-saving fittings; and conducting awareness campaigns to build an understanding of water as a scarce and valuable resource. Skills training is likely to be needed on how to conduct this campaign and to carry out the suggested measures.

Maritime

Increasing the safety and reliability of all maritime activities is a major priority of the Government and especially for inter-island shipping. The draft Infrastructure Report notes

[47] Institutional Assessment of Road Construction and Maintenance Services in the Royal Kingdom of Tonga Stage 1 Report: Technical Assessment. Prepared for Pacific Infrastructure Advisory Center April, 2011, p 28.

[48] See Footnote 24, p 38.

that this will require further investment in infrastructure and complementary initiatives to improve capabilities, facilities and systems. The report suggests a preliminary estimate of T$20 million is needed to cover these activities.

> *Maritime training facilities suffer from a lack of investment, and there is a need to upgrade safety standards and awareness and rebuild capability in maritime safety oversight.*[49]

The report states that while some of these issues are being addressed by existing programs, 'more urgently needs to be done'. The implications for the skills training system include the need to build up local capacity and systems for enhanced maritime safety oversight. Also needed are revitalised local training programs for seafarers and the associated facilities.

Aviation safety, security and continuity of services

Ensuring aviation safety and maintaining vital air service connections is also a high priority for the Government. The draft Tonga National Infrastructure Investment Plan 2013 notes that aviation operational requirements involve complying with increasingly more stringent industry safety and security standards. To do this will require that staff who are operating airports have improved capabilities in aviation safety and security. The draft plan states that 'this will require ongoing capacity building of staff to keep pace with aviation market developments; high industry standards; and rapid technology change'. This means that 'the necessary skills and qualifications for effective oversight of international safety and security standards are available in Tonga'.[50]

A significant investment program is already underway in the airport sector. This includes a focus on meeting safety and security compliance requirements in terms of fire and rescue capability, security screening, navigational aids, and runway condition.

Energy

Tonga has one of the highest levels of access to electricity in the region with around 85 per cent of the population on-grid and high levels of supply reliability. However, Tonga also has one of the highest costs of electricity in the region. This high cost has a negative impact of business costs and on household budgets. In addition, the high level of reliance on imported petroleum creates energy security and price stability issues. The major challenge in the Energy sector is providing reliable, sustainable and affordable energy to households and businesses in Tonga.

In 2009, Government responded to the twin challenges of reducing the Tongan contribution to global Greenhouse Gas emissions and improving national energy security by endorsing a policy of 50 per cent of energy from renewable resources by 2020.[51]

The major investment priorities in the Energy sector are: an additional 1-2 MW of solar generation capacity on Tongatapu (T$24 million); and solar generation capacity on outer-

[49] Tonga National Infrastructure Investment Plan 2013: Draft for Discussion, 14 December 2012, p 20.

[50] Tonga National Infrastructure Investment Plan 2013: Draft for Discussion, 14 December, p 22

[51] Tonga Energy Road Map 2010-2020: A ten year road map to reduce Tonga's vulnerability to oil price shocks and achieve an increase in quality access to modern energy services in an environmentally sustainable manner. Final Report, June 2010.

islands (T$9 million). These priority investments continue and accelerate the program of installing on-grid solar electricity generation and extend renewable energy generation to outer islands. The Tonga Energy Road Map 2010-2020 has instituted a number of supporting initiatives. These include strengthening the policy, legal, or regulatory environment; implementing measures to foster energy efficiency; undertaking research into other renewable energy from domestic sources such as wind, wave, hydro; and implementing improved fuel supply logistics.

The proposed Tonga Green Incentive Fund is a dedicated fund that would provide incentives for private sector investment in renewable energy and/or for the long-term financing of consumer-owned renewable energy installations. Other initiatives the Fund could finance could include end-use efficiency and demand-side management initiatives such as energy awareness, energy efficient lighting and appliances, etc aimed at reducing inefficient use and waste of electricity. There is also interest in trialling alternative sources of energy, such as coconut oil blended with or replacing diesel in existing or slightly modified engines, and biogas extracted from landfills. All these initiatives have implications for identifying 'green jobs' and 'green skills' in the Tongan context.[52]

Environmental protection and response

The draft of the Tonga National Infrastructure Investment Plan 2013 has noted that:

> *A key constraint to effective environmental assessment of infrastructure projects is a lack of technical skills and awareness amongst government agencies, private sector and the general public. This creates an urgent need for skills building in environmental assessment for project proponents and local consultants, and for broad awareness raising activities within agencies responsible for infrastructure development.*[53]

In particular, the plan highlights the need for additional human resources and technical skills building for staff within the Environmental Impact Assessment system. Department of the Ministry of Lands, Environment, Climate Change & Natural Resources (MLECCNR) and Planning and Urban Management Agency (PUMA). In an annex on climate change, the report notes:

> *Technical Training related to Revised Building Code and Road Design Standard: In line with revision of the Building Code and Road Design Standard, training for Ministry of Infrastructure staff responsible for inspection and enforcement will be required together with training for private sector organisations on the use of the building code and road design standard.*[54]

Green jobs, requiring new green skills will be needed to carry out the proposed Coastal Protection project for Eastern Tongatapu (T$15m). Green jobs and green skills will also be included to build and operate the proposed Infrastructure to enhance Disaster Response &

[52] ILO, 2011, Skills for Green Jobs: A Global View Synthesis Report based on 21 Country Studies. International Labour Organisation, Geneva.

[53] Tonga National Infrastructure Investment Plan 2013: Draft for Discussion, 14 December 2012, p 32

[54] Annex on climate change (para 124), Tonga National Infrastructure Investment Plan 2013: Draft for Discussion, 14 December 2012.

Evacuation (T$12m). The latter project involves building a range of infrastructure to support disaster response coordination and capacity and to support community evacuation prior to natural disaster events.

Conclusion

Forecasting the skill needs of the Tongan economy cannot be based on a projection of past trends. In an economy where the private sector is focused on serving the needs of a small domestic market and the tourist trade with its variable demand, government and donor investment in infrastructure provide the best guide to the future demand for skills. However, an estimate of the skills needed for a particular infrastructure project can only be worked out from more detailed discussions with the parties directly responsible for the project. In many cases, these will be the enterprises awarded the contracts to build or supply the infrastructure. In other cases, it will be the government agency charged with implementing an energy, water or environmental protection initiative.

Future opportunities for skills formation may also require a change in government policy to maximise the skills transfer opportunities. One way this could be done is for government to stipulate in a request for tenders that opportunities for skills transfer be provided such as the employment of apprentices. Another way could be for government to specify the 'green jobs' and competencies needed to implement its policy statements on energy and responses to climate change. Two key examples are the Tongan Energy Roadmap 2010-2020, especially in relation to renewable energy and energy conservation; and the Joint National Action Plan on Climate Change Adaptation & Disaster Risk Management 2010-2015.[55]

[55] On training for disaster response in the Pacific, see United Nations Office for the Coordination of Humanitarian Affairs (OCHA), 2012, Analysis of Disaster Response Training in the Pacific Island. September

Annex 5

Table A5.1: Proportion of employers in each industry sector whose number of workers increased, decreased or remained the same over the last 12 months compared with the previous year, per cent

Industry	Increase	Decrease	Same	NR	Total	N
Agriculture, forestry, fishing	66.7	0.0	33.3		100	6
Mining and quarrying	50.0	50.0			100	2
Manufacturing	27.3	45.5	27.3		100	11
Electricity, gas, steam and air conditioning supply	33.3	0.0	66.7		100	3
Water supply; sewerage, waste management activities	33.3	33.3	33.3		100	3
Construction	40.0	30.0	20.0	10.0	100	10
Wholesale and retail trade; repair of motor vehicles and motorcycles	28.6	28.6	42.9		100	14
Transportation and storage	14.3	21.4	57.1	7.1	100	14
Accommodation, food service activities & tourism	34.4	9.4	53.1	3.1	100	32
Information and communication activities	0.0	50.0	50.0		100	2
Financial and insurance activities	50.0	16.7	33.3		100	6
Professional, scientific and technical activities		100.0			100	1
Total	32.7	22.1	42.3		100	104

Table A5.2: Proportion of enterprises saying they expect to increase the number of their workers in the next three months, per cent in each industry sector

Industry	per cent	N
Agriculture, forestry and fishing	83.3	6
Electricity, gas, steam and air conditioning supply	33.3	3
Water supply; sewerage, waste management activities	33.3	3
Construction	30.0	10
Manufacturing	27.3	11
Wholesale and retail trade; repair of motor vehicles and motorcycles	21.4	14
Accommodation, food service activities & tourism	18.8	32
Transportation and storage	14.3	14

Table A5.3: Occupations supplied by post-secondary providers in Tonga	Total	Number aged 55 plus	Number of foreign workers	Prop of Tongans with post-school quals	Prop foreign workers with post-school quals	No of domestic workers requiring-post-school quals
Professions supplied by Tonga training providers						
Finance professionals	274	28	26	75	100	69
Nursing and midwifery professionals	248	16	9	75	100	62
Associate professionals & technicians						
Physical and engineering science technicians	134	9	27	49	85	48
Mining manufacturing and construction supervisors	45	6	12	31	58	12
Process control technicians	11	0	0	36		0
Life science technicians and related associate professionals	35	2	8	80	100	7
Ship and aircraft controllers and technicians	140	15	11	48	82	48
Medical and pharmaceutical technicians	47	2	0	49		0
Nursing and midwifery associate professionals	53	7	1	64	0	0
Veterinary technicians and assistants	1	0	0	100		0
Other health associate professionals	65	6	5	38	60	14
Financial and mathematical associate professionals	145	13	4	43	100	83
Sales and purchasing agents and brokers	34	2	3	32	100	23
Business services agents	24	5	1	33	100	16
Administrative and specialised secretaries	204	18	16	53	88	70
Regulatory government associate professionals	171	16	3	39	100	104
Legal social and religious associate professionals	148	34	31	32	48	25
Sports and fitness workers	55	2	6	35	67	18
Artistic cultural and culinary associate professionals	93	4	16	18	50	30
Information and communications technology operations and user support technicians	126	2	2	47	100	67
Telecommunications and broadcasting technicians	53	5	0	32		0

Table A5.3 cont'd: Occupations supplied by post-secondary providers in Tonga	Total	Number aged 55 plus	Number of foreign workers	Prop of Tongans with post-school quals	Prop foreign workers with post-school quals	No of domestic workers requiring-post-school quals
Clerical						
General office clerks	198	4	3	27	33	13
Secretaries (general)	255	20	14	46	64	47
Keyboard operators	137	2	4	44	50	9
Tellers money collectors and related clerks	199	4	3	28	33	10
Client information workers	316	9	10	25	10	0
Numerical clerks	431	19	26	41	42	4
Material-recording and transport clerks	61	0	1	21	0	0
Other clerical support workers	168	6	5	33	80	78
Hospitality & Tourist occupations						
Hotel and restaurant managers	104	37	52	50	69	20
Artistic cultural and **culinary** associate professionals	93	4	16	23	50	25
Travel attendants conductors and guides	65	10	5	29	40	7
Cooks	239	2	13	13	31	43
Waiters and bartenders	151	2	10	11	20	14
Building and housekeeping supervisors	114	4	9	3	0	0
Hairdressers beauticians and related workers	44	3	9	27	67	18
Construction work						
Engineering professionals (excluding electrotechnology)	107	8	12	52	83	34
Architects, planners, surveyors & designers	78	5	16	60	88	22
Manufacturing, mining, **construction** & distribution managers	91	32	18	47	67	18
Building frame and related trades workers	1201	86	58	6	16	110
Building finishers and related trades workers	143	11	20	18	30	17
Painters building structure cleaners and related trades workers	67	2	2	16	50	23

Table A5.3 cont'd: Occupations supplied by post-secondary providers in Tonga	Total	Number aged 55 plus	Number of foreign workers	Prop of Tongans with post-school quals	Prop foreign workers with post-school quals	No of domestic workers requiring-post-school quals
Other trades						
Sheet and structural metal workers moulders and welders and related workers	32	3	12	25	25	0
Blacksmiths toolmakers and related trades workers	5	0	0	20		0
Machinery mechanics and repairers	409	26	23	18	39	87
Printing trades workers	34	1	1	18	100	28
Electrical equipment installers and repairers	152	6	4	32	50	28
Electronics and telecommunications installers and repairers	51	1	1	39	100	31
Food processing and related trades workers	169	10	8	8	38	49
Wood treaters cabinet-makers and related trades workers	15	2	1	7	0	0
Garment and related trades workers	85	16	6	9	17	6

Chapter Six: Tongan participation in regional and international labour markets

Tongans have a strong migrant presence in three countries: New Zealand, Australia and the USA. This chapter presents data on the job profiles of Tongans in New Zealand, and Australia; highlights the changing nature of the skills migration polices of Australia and New Zealand and reports on the skills profile expected of migrants to these countries and to the USA. Also addressed are the opportunities for Tongan seafarers.

Tongans living in New Zealand

In New Zealand, the most recent data available are for the 2006 census. The New Zealand census shows that the Tongan community grew more than threefold between 1986 and 2006 from 13,600 to over 50,500 residents. Of these, 29,163 were aged 15 years and over. Of those 15 years and over, 56 per cent were employed, 14 per cent had no source of income (12.5 per cent for males and 15.4 for females). The remainder were receiving some form of income, mostly from government.[56]

The largest occupation group for Tongans resident in New Zealand is labouring (see Table A6.1). This is followed by 'technicians & trades workers' and 'machinery operators & drivers'. Also important occupations are: 'community & personal service workers' and 'professionals', followed by 'clerical & administrative workers' and 'sales workers'. Just over one-in-four of these jobs (28 per cent) require middle-level skills and above (Managers Professionals Technicians and trades workers). However, for men, near to one-in-three (32 per cent) are in a middle-level occupation or above compared with just above one-in-five women (22 per cent).

There are marked differences between men and women in most occupations (see Table A6.1). The sex differences are greatest for 'technicians & trades workers' and 'machinery operators & drivers' and are significant for 'community & personal service workers', 'clerical & administrative workers' and for professionals. In other words, the main occupations women are working in are: labourers, community & personal service workers, clerical & administrative workers, professionals, and sales workers. The main jobs for men are: labourers, technicians & trades workers, machinery operators & drivers, professionals, managers & community & personal service workers.

The income of Tongans in New Zealand in 2006 varies widely from one-in-ten on zero income to over one-in-ten (12.3 per cent) on $30,001-$40,000 See Table A6.2).

[56] http://www.stats.govt.nz/Census/2006CensusHomePage/QuickStats/quickstats-about-a-subject/pacific-peoples/tables.aspx

Tongans living in Australia

Information from the 2011 Australian census reveals that there are 9,209 people born in Tonga who are resident in Australia. Of these, 4,479 are employed in the occupational groups shown in Table A6.3. As with the Tongan population in New Zealand, the largest occupation group is labouring although the proportion in this occupation is larger (28 per cent compared with 22 per cent in New Zealand). The next largest group is 'machinery operators and drivers' which is double the proportion of the Tongans in work in New Zealand. The next important groupings are: Community & Personal Service Workers; Professionals; and Clerical & Administrative Workers. The share of occupations at middle-level skills or higher (Managers Professionals Technicians and trades workers) is one-in-five (20 per cent) compared with one-in-four in New Zealand (28 per cent). Tongans in Australia are concentrated in occupations below middle skill level.

There are marked differences in occupations between men and women. Table A6.4 presents data on the top 25 occupations of Tongan men compared with women who are resident in Australia. The top ten occupations for men are: forklift drivers, storepersons, security officers & guards, crop farm workers, truck drivers, packers, registered nurses, machine operators, building & plumbing labourers, and engineering production workers. The top ten occupations for women are: registered nurses, nursing support & personal care workers, aged & disabled carers, packers, storepersons, commercial cleaners, crop farm workers, child carers, general clerks, and kitchenhands

The main occupations that require TVET level training are: nursing support and personal care workers, aged and disabled carers, concreters, structural steel and welding trades workers, child carers, and structural steel construction workers (see Table A6.6).

Education levels of Tongans in Australia

Over a majority (59 per cent) of Tongans resident in Australia aged 15 years and over and not in education have completed Year 12 or higher, with 29 per cent having completed Year 10 or 11, one-in-ten (10 per cent) have completed up to Year 9 and 7 per cent did not go to school. Over one-in-four (28 per cent) have a post-school qualification. One-in-six (15 per cent) have a certificate, 6 per cent have a Diploma or Advanced Diploma, one-in-twenty (5 per cent) has a bachelor's degree and 2 per cent have a postgraduate qualification.

Income earned by Tongans in Australia

Data are also available on the income levels of Tongans resident in Australia. One-in-twenty have no income, a negative income or have not stated their income. The largest number of Tongans are earning $31,200-$41,599 and over one-in-six (17 per cent) are earning over $52,000. The income earned varies by year left secondary education and type of post-school qualification. Year left school affects earnings. Of the Tongans who left secondary school in Year 8 or 9, only 14 per cent are earning above $41,600. Of those who have completed Year 10 or 11, over a quarter, (27 per cent) are earning above $41,600. Of those with Year 12 and above, over one-in-three (37 per cent) are earning above $41,600.

The type of post-school qualifications also affects the earnings of Tongans. Of those with a certificate or a diploma, two-in-five (39 per cent) are earning above $41,600. Of those with a degree or higher, three-in-five (60 per cent) are earning above $41,600.

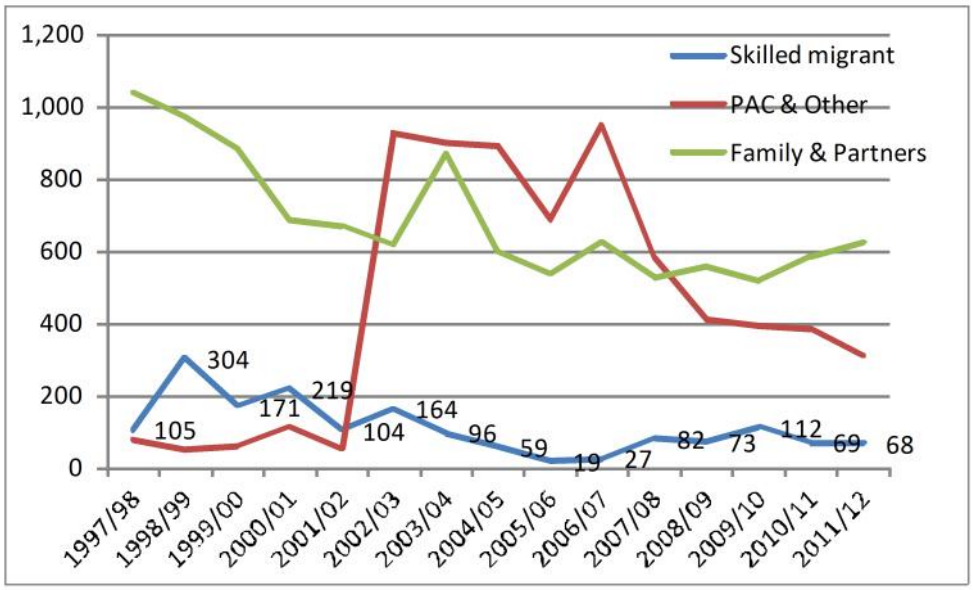
Profile of Tongan migrants to New Zealand

According to New Zealand's Immigration statistics, some 19,076 Tongans have entered New Zealand as migrants entitled to residence between 1 July 1997 to 3 November 2012. Most Tongan migrants have entered through the international/humanitarian stream, specifically the Pacific Access Program since 2002/03. Or they enter as members of the family of the principal applicant for migration through the Parent, Sibling, Adult, Child Stream or the Uncapped Family Sponsored Stream. The number of principal applicants for migration has been 10,528.

Not recorded in the above data are the temporary workers entering New Zealand under the Recognised Seasonal Worker Program. Data for this program show that this number has risen from 829 workers in 2007/08 to 1,678 workers in 2011/12.

It is important to note that less than one-in-ten long-term migrants to New Zealand over the last 15 years (or 1,688 in number) have entered under the business or skilled category. The number of Tongan migrants using the skilled migrant entry stream since financial year 2004-05 is even lower at one-in-twenty or 491 skilled migrants. Their actual numbers by year of entry are shown in Figure 1 below. From a peak of 304 in the financial year 1998/99, the number of skilled or business entry migrants has declined to a low of 19 and 27 in years 2005/05 and 2006/07. Their number has only risen to 69 and 68 in the last two financial years.

Figure 1: Tongan approved residence migrants to New Zealand by residence substream & financial years 1997/98 to 2011/12, numbers for skilled migrants only



Source: R1_Residence decisions by FY: 5 Nov 2012, NZ Department of Labour (Immigration)

The conclusion to be drawn from these data is that relatively few Tongan migrants to New Zealand in the past 15 years have gained entry on the basis of the skills they hold. Information on the occupations of applicants for work visas for the last four years to 2011/12 which includes Pacific Access applicants shows that most Tongan migrants approved to work in New Zealand are labourers, and community & personal service workers (61 per cent). Technicians & trades workers account for 16 per cent and professionals account for 10 per cent of all work visas approved. The remaining occupations of machinery operators & drivers managers, clerical & administrative workers, and sales workers account for 13 per cent of all approved work visas.

Essential Skills Stream

Essential Skills is a temporary visa stream to respond to temporary or seasonal regional labour market needs. Half of the work visa applicants from Tonga are labourers, machine operators and drivers and sales workers. Technicians and trade workers account for 19 per cent and professionals account for 8 per cent of Tongan migrants approved to work under the Essential Skills Stream. The number of Technicians and trade workers between 2008/09 and 2011/12 who were granted a work visa under Essential Skills Stream was 164. Some 124 people who were Community and Personal Service Workers also migrated to work in New Zealand.

Skilled Migrant Category

The occupations of Tongan approved applicants for New Zealand residence under the Skilled Migrant Category since 2008/09 to 2011/12 are mostly skilled workers or professionals. Of the 83 Tongans who were granted NZ residence under this skilled worker category, nearly half (47 per cent) were technicians and trades workers. Another 36 per cent were professionals by occupation. Both broad groups accounted for 83 per cent of all approved applicants. The other occupational groups were: managers, and community & personal service workers (7 per cent respectively) and clerical & administrative workers (2 per cent).

These data show clearly that Tongans with a technician or trade qualification have the greatest chance of gaining residence in NZ through the Skilled Migrant category. This is a major change from the earlier period 2003/04 to 2007/08 when half of the approved applicants for skill migrant entry (78 persons in total) were professionals and only 13 per cent with technicians or trades workers.

Data on the occupations of Tongans approved for Skilled Migrant entry to NZ show that the most important occupations are: telecommunications technician, ship's engineer, diesel motor mechanic, fitter-welder and welder (first class), prison officer, carpenter and chef.

Tongan migration to Australia

Over a longer period, based on arrival in Australia between 1 January 2002 to 1 January 2012, 1,483 Tongans migrated directly to Australia, of whom only 195 entered as skilled migrants and 1,231 entered under the family category.[57] Tongans can migrate to Australia for work making use of either temporary visas or a Permanent Migration visa. For visas for temporary work, there are two options: Subclass 457 and the new Seasonal Workers Program (formerly

[57] Department of Immigration & Citizenship, 2012, Settlers By Country of Birth (Settlement) by Migration Stream, 18 September, p 15.

Pacific Seasonal Worker Pilot Program). In relation to the former, there have been about 40 subclass 457 primary visas granted for the five years, 2007-2011. For the latter for the same period, around 1,600 visas have been granted for seasonal work in Australia.

For permanent migration visas for work for the 2007-2011 period, a total of 36 principal applicants with Tongan citizenship have been granted permanent residence in Australia. The following tables supplied by the Migration Statistics area of the Australian Department of Immigration and Citizenship show the distribution of Tongan migrants by type of migrant visas. Numbers of migrants less than five are not available to ensure that individual migrants cannot be identified.

Skilled Migration Outcome for the citizens of Tonga - Principal applicants

Category	2007-08	2008-09	2009-10	2010-11	2011-12
1 November Onshore			< 5		
Business Skills	< 5	< 5		< 5	< 5
Distinguished Talent	< 5		< 5		< 5
Employer Sponsored	< 5	< 5	< 5	5	< 5
General Skilled Migration	***< 5***	***< 5***	***< 5***		***< 5***
Skilled Australian Sponsored	< 5				< 5
Skilled Independent	< 5	< 5	< 5		< 5
Total Outcome	**7**	**7**	**6**	**6**	**10**

Skilled Migration Outcome for citizens of Tonga by nominated occupation - Principal applicants

Nominated Occupation	2007-08	2008-09	2009-10	2010-11	2011-12
070199 Self Employed	< 5	< 5		< 5	< 5
070299 Occupation Unknown	< 5		< 5		
080599 Non Working Child					< 5
111211 Corporate General Manager		< 5			
139999 Specialist Managers nec			< 5		
221111 Accountant (General)	< 5				< 5
234211 Chemist				< 5	
241411 Secondary School Teacher	< 5	< 5	< 5		
252312 Dentist			< 5		
254499 Registered Nurses nec	< 5	< 5		< 5	
271299 Judicial and Other Legal Professionals nec				< 5	
272199 Counsellors nec					< 5
272211 Minister of Religion			< 5		< 5
323211 Fitter (General)				< 5	
342211 Electrical Linesworker (Aus) / Electrical Line Mechanic (NZ)				< 5	
351411 Cook					< 5
392312 Small Offset Printer					< 5
452411 Footballer			< 5		
452499 Sportspersons nec	< 5				< 5
Total	**7**	**7**	**6**	**6**	**10**

The information about the permanent migrant visa shows the importance of direct employer sponsorship. This type of work visa ensures that the migrant has a specific job to go to. The skilled independent category means that the migrant has to find a job under their initiative, not easy to do, especially for work matched to the migrant's recognised skill level. The most important occupations of the Tongan skilled migrants to Australia seem to be: self employed, secondary school teacher, registered nurse, and sportsperson. However, the overall numbers (36) are low and the distribution wide, so it is hard to identify any occupation group as more than another.

Current demand for skilled labour in Australia and New Zealand

Manpower Group has some 3,800 offices in over 80 countries and territories. The company conducts an annual survey of employers hiring intentions by asking them about whether they are having difficulty filling talent; and what jobs are most difficult to fill and why. A survey of employers in Australia and New Zealand in the first quarter of 2012 revealed that half are having difficulty filling jobs.[58]

The jobs Australian employers are having the greatest difficulty in filling are: skilled trades workers, engineers, sales representatives, accounting & finance staff, IT staff, management, technicians, drivers, mechanics, and chefs/cooks. For the seventh consecutive year of the survey, employers report that skilled trades positions are the most difficult type of vacancy across Australia.[59] The list for New Zealand is similar: engineers, sales representatives, skilled trades workers, IT staff, technicians, accounting & finance staff, management/executives, chefs/cooks marketing, public relations/communications staff, and drivers.[60] One-in-five New Zealand employers and one-in-four Australian employers report that they are willing to look outside their own region and country for suitable workers.[61]

Skilled migration to Australia and New Zealand

The United States lacks a permanent resident skilled migration category; instead it admits one million low-skilled migrants per year. Australia, New Zealand, and Canada, by contrast, have over the last decade given priority to migrants with skills-in-demand.[62]

In the decade since 2000, there has been extraordinary growth in skilled migration to New Zealand and Australia, through both permanent and temporary entry. Between 2004/05 and 2008/09, Australia selected 358,151 permanent General Skilled Migration migrants, including dependants. In 2009/10 Australia allocated 59 per cent of its permanent migration places to skilled applicants, 33 per cent to Family Category entrants, and 8 per cent to Humanitarian Category entrants, out of a programme total of 182,450.

New Zealand had a planned overall intake of 45,000-50,000 people, including secondary applicants, across the: Skilled/Business Category: (60 per cent); Family (Partner and Dependent Child); Category: (21 per cent); Family (Parent, Adult Child and Adult Sibling)

[58] ManpowerGroup, 2012 Talent Shortage Survey Australia and New Zealand, pp 13 & 17.

[59] See Note 36, p 13.

[60] See Note 36. p 17.

[61] See Note 36, p 15 & 19.

[62] Hawthorne, L; 2011, Competing for Skills: Migration policies and trends in New Zealand and Australia. Department of Labour PO Box 3705 Wellington New Zealand p xiii. The following information on the differences between Australia and New Zealand is drawn from the Hawthorne report.

Category: (11 per cent); and the International/Humanitarian Category: (8 per cent).

The top five professions of skilled migrants to Australia in the period 2004 to 2009 were accounting (32 per cent), computing (23 per cent), architecture/building (9 per cent), engineering (9 per cent), and nursing (5 per cent). The major trades of skilled migrants were chefs/bakers (30 per cent of trade arrivals), engineering (14 per cent), building excluding plumbing (14 per cent), electrical (12 per cent), and hairdressing (12 per cent).

For New Zealand, computing and education were the major occupations for skilled migrant professionals, both constituting 18 per cent of all professionally qualified skilled migrants), followed by registered nurses (17 per cent), architects and engineers (15 per cent), business, human resource, and marketing professionals (15 per cent), and health professionals (9 per cent).[63]

Occupational demand is a key determinant of migrant selection in both countries, There has been a rising points threshold for skilled category selection to both countries. From 2004/05 to 2008/09, 58 per cent of Australia's 457 temporary visa arrivals were working in professional fields (compared with 66 per cent of permanent general skilled migrant arrivals). Seventeen per cent were in the trades, 13 per cent were associate professionals, and 10 per cent were managers and administrators. Just 2 per cent possessed lower level skills, despite the pressures of the mining boom and the existence of select low- skilled schemes (such as the recruitment of abattoir workers).

The primary General/Essential Skills groups entering New Zealand from 2004/05 to 2008/09 were clerical, sales and service workers (21 per cent), followed by 19 per cent in professional occupations, 15 per cent in the trades, 11 per cent who were managers and administrators, 11 per cent who were associate professionals, and 8 per cent who were labourers. The major professions in 2008/09 were health and life sciences, including nursing (8,999), and teachers and lecturers (4,163). Two groups dominated the 19,791 trades total that year: mechanic and fabrication engineering (6,299) and automotive, mechanical, and building workers.

An important new trend is a greater rôle for employer selection in both countries. According to the Hawthorne report: ‘Employers in both countries have come to exert extraordinary influence on permanent as well as temporary entry flows’.[64] Australian employers in selecting migrants for temporary work visas are emphasising people with high-level English language ability. They are also seeking people from comparable high-quality education systems, and want applicants who can fit into the workplace at speed. New Zealand's temporary skills entry stream (General/Essential Skills Category) has long allowed employers to assess the suitability of applicants for permanent skilled migrant status. Australia's priority ranking system is moving in the same direction.[65]

Australia and New Zealand publish skills shortages lists. New Zealand’s Immediate Skills List has over 70 occupations listed. Australian Immigration lists over 440 occupations eligible for the General Skilled Migration visas and 126 of these are middle-level occupations (see Tables A6.8 & A6.9).

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[63] See Note 40, p xv.

[64] See Note 40, p 157.

[65] See Note 40, p 157.

Tongans living in the United States

According to 2010 US census data, just over 57,000 people of Tongan ethnicity live in the USA.[66] California has the most Tongans with some 22,850, followed by Utah with 13,235 Tongans, and Hawaii, with some 8,000. Nearly, 13,000 live in the other states.[67]

Information on the occupations held by Tongans is only available for a larger group of Pacific Islanders resident in the USA. This group includes the original peoples of Hawaii, Guam, Samoa or other Pacific Islands. The 2006-2010 American Community Survey conducted by the US Census Bureau provides details on the occupations of this larger grouping (see Table A6.10 below).

Many Tongans working in the USA are likely to be found in jobs that require less than middle-level skills. These jobs are administrative support workers; service and sales workers and transportation & material moving operative workers. However, middle-level skills and above are needed in many cases for management, business & financial workers; other professional workers; and construction & extractive craft workers. The importance of different occupation groups varies for men and women.

The most important jobs for Tongan men in the USA are likely to be: service workers, except protective work; construction & extractive craft workers; administrative support workers; and transportation & material moving operative workers; and labourers & helpers. Only one important occupation group for men requires middle-level skills above the craft level: management, business & financial workers.

Tongan women resident in the USA are also likely to be in occupations that do not require middle-skills above craft level. These are administrative support workers, and service & sales workers. However, middle-level skills are important for women in the following occupations: management, business & financial workers; other professional workers and healthcare practitioner professionals.

Need for higher education levels for immigrants in the US

Higher levels of education are needed for migrants to obtain secure work in the USA compared with a generation ago. The share of working-age immigrants in the United States who have a bachelor's degree has risen considerably since 1980, and now exceeds the share without a high school diploma. In 1980, just 19 per cent of immigrants aged 25 to 64 held a bachelor's degree, and nearly 40 per cent had not completed high school. By 2010, 30 per cent of working-age immigrants had at least a college degree and 28 per cent lacked a high school diploma.[68]

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[66] Table 5. Native Hawaiian and Other Pacific Islander (NHPI) Population by Number of Detailed Groups: 2010, The Native Hawaiian and Other Pacific Islander Population: 2010, 2010 Census Briefs, issued May 2012

[67] See Figure 6 Per centage Distribution of Largest Detailed Native Hawaiian and Other Pacific Islander Groups by State: 2010, The Native Hawaiian and Other Pacific Islander Population: 2010, 2010 Census Briefs, issued May 2012

[68] Matthew Hall, Audrey Singer, Gordon F. De Jong, & Deborah Roempke Graefe, 2011, The Geography of Immigrant Skills: Educational Profiles of Metropolitan Areas. The Metropolitan Policy Program, Brookings Institution, Washington DC, June, p 1.

Forty-four of the US's 100 largest metropolitan areas are high-skill immigrant destinations. In these cities, college-educated immigrants outnumber immigrants without high school diplomas by at least 25 per cent. These destinations include large coastal metro areas like San Francisco. The 30 low-skill destinations, in which the relative sizes of these immigrant skill groups are reversed, include many in the border states of the West and Southwest, as well as in the Mid West.[69]

Nursing in the USA

The US has recently become the world's largest importer of nurses, surpassing the United Kingdom. Although the UK has historically depended on foreign nurses to a larger extent, in recent years, they have adopted stricter regulations on the hiring of foreign-educated nurses.[70] The average age of nurses working in the US is more than 45 years, indicating that aging of the nursing labour force.[71] With the nurse shortage projected to grow substantially in the near future, the US will have to rely more heavily on foreign nurses to meet the demand.[72]

The share of foreign educated nurses taking the US examination for Registered Nurses increased from 6 per cent in the mid-1980s to close to 20 per cent in the mid-2000s.[73] The composition of foreign nurses has also changed over time. The Philippines has emerged as the single largest source of nurses educated abroad, representing more than half of foreign nurses entering the US in the last decade. Filipino nurses are also more likely to have bachelor degrees (84 per cent) compared with other foreign-born nurses in the US (45 per cent) who are more likely to have only a diploma. They also earn a higher hourly rate than other foreign-born nurses, due to the fact that they are more likely to work in hospitals, work full-time and do shift work.[74] This profile of opportunities for foreign-born nurses in the US shows that access to better paid positions is highly competitive.

Maritime work for Tongans

Existing maritime workforce

There are opportunities for Tongans to work as seafarers on foreign-owned vessels in the region. The Tonga Maritime Polytechnic Institute in 2009 had manning contracts with three shipping companies. Oceangas Australia Pty Ltd, which operates LPG Gas tankers in the Pacific employed 23 Tongans plus a trainee. Inco Ships Australia Pty Ltd operates conventional bulk carriers, complex self-unloading bulk cargo ships, as well as fully automated powder cement carriers. Inco Ships also operate crewing recruitment agencies in Sydney and Manila and offers crew supply services on a lump sum basis for any type of vessel. The company employed 43 Tongans in 2009. Pacific International Lines (PIL) from Singapore employed 14 Tongan crew in 2009. The 2009 report notes that 44 Tongan seafarers are employed by SCP (Shipping Corporation of Polynesia).

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[69] See Note 47, p 1.

[70] Patricia Cortes & Jessica Pan, 2012 'The Relative Quality of Foreign Nurses in the US' June, Working Paper, p 2

[71] See Note 49, p 8.

[72] See Note 49, p 1.

[73] See Note 49, p 8.

[74] See Note 49, p 9.

The number by type of positions these seafarers held on vessels operating in Tonga and elsewhere is shown in Table A6.11. Just over half (55 per cent) are Able or Ordinary Seaman. Only just over one-in-three (35 per cent) have positions with higher qualifications (Chief Officer to Master Mariner). There appears to be considerable scope for existing Tongan seafarers to obtain higher qualifications.

A 2009 report on the Maritime Polytechnic Institute noted there was a demand from Oceangas for junior officers trained to a level of Master 3 to the International Maritime Organisation standard. They also require advanced fire-fighting and Global Maritime Distress Safety System (GMDSS) general operator certificates to work on the gas tankers.[75] Other examples of the demand for higher skills are also given.[76]

The deep sea fishing industry and the rôle of observers

A significant opportunity for work on foreign vessels is the Observer Programs of the Western and Central Pacific Fisheries Commission (WCPFC) and the Forum Fisheries Agency. Observers are placed on board tuna fishing vessels across the region to report on fishing catches and methods.[77] Often they travel with the fishing vessels, being away at sea for weeks or months at a time, to gather independent information about what is happening at sea. They make notes of how much fish is caught, what type of fish are caught, what methods are used to catch fish, and whether they observed any breaches to laws and regulations. This information is then fed back into central databases so regional agencies and national governments can keep track of what fishing vessels are doing and whether fishing laws and regulations are being implemented. Debriefers meet observers when they come back to port to check their data and provide feedback. They also discuss any issues observers have such as relations with the crew and payment of relevant salary and allowances.

Observers are placed on deep sea fishing vessels, including US, Japanese, Korean and Taiwanese vessels. Fishing vessels are obliged to provide observers with a bed and food for the time they are on-board the ship. Observers earn approximately USD $30-50 a day. Observers need maritime training on how to live and work on a vessel at sea, how to take part in fire fighting drills, navigation, basic first aid and sea safety training.

Tonga is a member of the Regional Observers Program of the Western and Central Pacific Fisheries Commission. However, observers from Tonga are placed by the Tongan Fishery Department on vessels fishing in their waters. In November, 2012, the Government Tonga entered into a Memorandum of Understanding (MOU) with the Pacific Islands Forum Fisheries Agency. This agreement is to provide fisheries observer services to the US purse-seine tuna fleet operating in the Western and Central Pacific Ocean.[78] For these services, the Tongan Division of Fisheries' observer programme has been paid US$77,125 to coordinate 25 observer placements on US-flagged vessels over the next twelve months. This funding is to employ and train the observers as well as developing the national infrastructure needed to support this capacity expansion.

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[75] Vocational Training in the Maritime Sector: the Way Forward. Interim Report, November 2009, p 7.

[76] See Note 45, p 7.

[77] The following description is taken from the Observer Program, Pacific Islands Forum Fisheries Agency http://www.ffa.int/system/files/2%20MINUTE%20BRIEFS_Observers_regional%20factsheet.pdf

[78] Tongan Ministerial Visit to FFA (Forum Fisheries Agency), Honiara, Solomon Island, Press Release for Consideration - Tongan Ministerial Visit. http://www.tongafish.gov.to/

The potential to make more use of Tongan observers on foreign vessels depends on whether the government allows foreign fishing vessels access to Tongan waters and how many vessels granted access require observers. Most tuna foreign vessels who want to access to Tongan waters are likely to use longline fishing where there is a regionally agreed observer coverage of only five per cent of vessels. This would create some opportunities on a small-scale for Tongan observers.

However, the agreed five per cent coverage of longline fishing vessels is minimum coverage. A higher proportion of vessels required to carry observers could be imposed as part of access agreements. If a 100 per cent observer coverage of all foreign vessels fishing in Tongan waters was required, this would create many more opportunities for Tongan nationals to be employed as observers.

Annex 6

Table A6.1 : Occupations of Tongans resident in New Zealand 2006, per cent

Occupation	Males	Females	Total
Managers	6.2	5.1	5.8
Professionals	6.2	12.9	9.2
Technicians and trades workers	19.5	3.7	12.6
Community and personal service workers	5.6	15.3	9.8
Clerical and administrative workers	3.9	13.0	7.9
Sales workers	3.8	10.4	6.7
Machinery operators and drivers	18.2	5.3	12.6
Labourers	22.9	20.0	21.6
Not elsewhere included(1)	13.6	14.1	13.8
Total	100.0	100.0	100.0
N	8,931	6,888	15,819

(1) Includes Response unidentifiable, Response outside scope and Not stated.
Source:

Table A6.2: Distribution of personal income of Tongans resident in New Zealand, 2006, per cent

Total personal income	2006
Loss	0.9
Zero income	9.8
$1–$5,000	9.8
$5,001–$10,000	9.1
$10,001–$15,000	7.7
$15,001–$20,000	6.6
$20,001–$25,000	7.0
$25,001–$30,000	7.7
$30,001–$40,000	12.3
$40,001–$50,000	5.4
$50,001–$70,000	3.5
$70,001–$100,000	1.1
$100,001 or more	0.4
Not stated	18.7
Total	100.0
N	29,163

Table A6.3: Occupation distribution of Tongans resident in Australia 2011, per cent

Occupation - one digit level	per cent
1 - Managers	2.4
2 - Professionals	12.7
3 - Technicians and Trades Workers	4.6
4 - Community & Personal Service Workers	18.0
5 - Clerical And Administrative Workers	6.3
6 - Sales Workers	1.8
7 - Machinery Operators and Drivers	25.9
8 - Labourers	28.3
	100.0
N	4479

Table A6.4: The main occupations of Tongans by birth in Australia, 2011

Occupations at 4 digit level	Male	Occupations at 4 digit level	Female
Forklift Drivers	261	Registered Nurses	326
Storepersons	241	Nursing Support & Personal Care Workers	266
Security Officers & Guards	182	Aged & Disabled Carers	164
Crop Farm Workers	165	Packers	157
Truck Drivers	153	Storepersons	85
Packers	117	Commercial Cleaners	54
Registered Nurses	101	Crop Farm Workers	50
Machine Operators nfd	87	Child Carers	46
Building & Plumbing Labourers	76	General Clerks	44
Engineering Production Workers	75	Kitchenhands	43
Concreters	63	Food & Drink Factory Workers	41
Structural Steel & Welding Trades Workers	59	Sales Assistants (General)	34
Freight & Furniture Handlers	50	Bank Workers	30
Metal Engineering Process Workers	48	Forklift Drivers	30
Ministers of Religion	45	Retail Managers	23
Structural Steel Construction Workers	43	Receptionists	23
Nursing Support & Personal Care Workers	39	Machine Operators nfd	22
Food & Drink Factory Workers	35	Inquiry Clerks	20
Aged & Disabled Carers	34	Laundry Workers	20
Labourers nfd	34	Product Assemblers	20
Commercial Cleaners	33	Contract, Program & Project Administrators	19
Meat, Poultry & Seafood Process Workers	31	Accounting Clerks	18
Sales Assistants (General)	27	Meat, Poultry & Seafood Process Workers	16
Bus & Coach Drivers	27	Checkout Operators & Office Cashiers	15
Motor Mechanics	25	Welfare Support Workers	12

Table A6.5 : The top twenty occupations of Tongans in Australia that require TVET training, 2011, number in each occupation

Occupations at 4 digit level	Total
Nursing Support and Personal Care Workers	305
Aged and Disabled Carers	198
Concreters	66
Structural Steel and Welding Trades Workers	59
Child Carers	49
Structural Steel Construction Workers	43
Bank Workers	30
Motor Mechanics	28
Purchasing and Supply Logistics Clerks	26
Welfare Support Workers	25
Contract, Program and Project Administrators	22
Accounting Clerks	21
Metal Fitters and Machinists	20
Transport and Despatch Clerks	19
Butchers and Smallgoods Makers	13
Printers	12
Construction Managers	11
Production Managers	9
Carpenters and Joiners	9
Electricians	9

Table A6.6: Approved work visas to New Zealand, financial years 2008/09 to 2011/12, per cent

Occupation (ANZSCO)	Per cent
Labourers	43.8
Community & Personal Service Workers	17.5
Technicians & Trades Workers	15.6
Professionals	9.9
Machinery Operators & Drivers	6.8
Managers	3.2
Clerical & Administrative Workers	2.0
Sales Workers	1.3
	100.0
N	1,510
W3 Occupations of Work apps approved, NZ Dept of Labour (Immigration), 5 November 2012	

Table A6.7: The detailed occupations of Tongans granted NZ residence in the technician & trades grouping, for financial years 2008/09 to 2011/12, number

Occupation	N
Telecommunications Technicians	6
Fitter-Welders + Welder (First Class) (Aus)/Welder (NZ)	4 + 2
Ship's Engineers	5
Diesel Motor Mechanics	4
Prison Officers	4
Carpenters	3
Chefs	3
Baker	2
Bricklayer	2
Sheetmetal Trades Worker	2
Cabinetmaker	1
Carpenter and Joiner	1
Developer Programmer	1
Diagnostic and Interventional Radiologist	1
Diversional Therapist	1
Electrical Linesworker (Aus)/Electrical Line Mechanic (NZ)	1
Electrician (General)	1
ICT Support Technicians nec	1
Mechanical Engineering Technician	1
Motor Mechanic (General)	1
Painting Trades Worker	1
Panelbeater	1

Table A6.8: Consolidated Sponsored Occupation List Schedule 2, Skilled Migration Visa, Australia

Selected Australian Middle-skill Occupations in demand		
Agricultural Technician	Fisheries Officer	Primary Products Inspectors not elsewhere classified
Apparel Cutter	Floor Finisher	Print Finisher
Arborist	Florist	Printing Machinist
Architectural Draftsperson	Furniture Finisher	Quarantine Officer
Baker	Gardener (General)	Roof Tiler
Blacksmith	Gas or Petroleum Operator	Safety Inspector
Bricklayer	Graphic Pre-press Trades Worker	Sail Maker
Broadcast Transmitter Operator	Hairdresser	Saw Maker & Repairer
Building & Engineering Technicians	Hardware Technician	School Laboratory Technician
Building Associate	ICT Customer Support Officer	Screen Printer
Building Inspector	ICT Support Technicians	Shoemaker
Butcher or Smallgoods Maker	Landscape Gardener	Signwriter
Cabinetmaker	Life Science Technician	Small Offset Printer
Cabler (Data and Telecommunications)	Light Technician	Sound Technician
Camera Operator (Film, TV or Video)	Maintenance Planner	Surveying or Spatial Science Technician
Chef	Make Up Artist	Telecommunications Cable Jointer
Chemistry Technician	Meat Inspector	Telecommunications Linesworker
Clothing Patternmaker	Mechanical Engineering Technician	Telecommunications Technician
Clothing Trades Workers not elsewhere classified	Mechanical Engineering Draftsperson	Television Equipment Operator
Communications Operator	Medical Laboratory Technician	Textile, Clothing & Footwear Mechanic
Construction Estimator	Metal Casting Trades Worker	Toolmaker
Cook	Metal Fitters & Machinists nec	Vehicle Body Builder
Diver	Musical Instrument Maker or Repairer	Vehicle Painter
Dressmaker or Tailor	Nurseryperson	Vehicle Trimmer
Earth Science Technician	Optical Dispenser	Veterinary Nurse
Electronic Engineering Draftsperson	Optical Mechanic	Wall & Floor Tiler
Electronic Engineering Technician	Panelbeater	Web Administrator
Electroplater	Pastry cook	Wood Machinist
Engraver	Picture Framer	Wood Turner
Fire Protection Equipment Technician	Power Generation Plant Operator	

Table A6.9: Selected middle-level occupations and required work standards for visa applicants with an offer of work, from the 'Immediate Skill Shortage List', effective 5 December 2011, Immigration New Zealand

Occupation Group	Middle-level occupations	Required standard for work visa applicants with an offer of employment
Agriculture and Forestry	Arborist	Trade Certificate AND/OR National Certificate in Horticulture Arboriculture Level 4 AND a minimum of two years' relevant experience
Construction	Construction Project Manager (Foreman) (Roading and Infrastructure)	At least five years' experience in building or maintaining roads & Staff management experience & appropriate drivers licence
Construction	Surveying Technician (Spatial Science Technician/Hydrographic Technician)	National Certificate in Surveying (Hydrographic Surveying) Level 4
Construction	Surveying Technician (Spatial Science Technician/Land Surveyor's Technician)	Bachelor or Diploma of Surveying & two years' relevant work experience
Engineering	Civil Engineering Draughtsperson Electrical Engineering Draughtsperson Electronic Engineering Draughtsperson Mechanical Engineering Draughtsperson	National Diploma in Engineering Level 6 OR equivalent
Recreation, Hospitality and Tourism	Café and Restaurant Manager (including Bar Manager)	National Certificate in Hospitality (Operations Supervision) Level 4, & a minimum of four years' combined experience in hospitality establishments with a minimum of two years at supervisory level or higher
Trades	Baker	National Certificate in Baking (Craft Baking) (Level 4) OR National Certificate in Baking (Inshore/Franchise) (Level 4)
Trades	Electronic Equipment Trades Worker	National Diploma in Engineering (Electrotechnology) (Level 6) AND New Zealand registration with the Electrical Workers Registration Board
Trades	Motor Mechanic (General) (Automotive Technician)	National Certificate in Motor Industry (Automotive Electrical and Mechanical Engineering) (Level 4) with strand in Light Vehicle OR National Certificate in Motor Industry (Automotive Engineering) (Level 4) OR NZ Trade Certificate in Automotive Engineering OR NZ Trade Certificate in Motor Mechanics AND three years' relevant experience
Trades	Motor Mechanic (General) (Automotive Air Conditioning Technician)	National Certificate in Motor Industry (Automotive Specialist Engineering) (Level 4) with strand in Heating, Ventilation and Air Conditioning OR National Certificate in Motor Industry (Automotive Air Conditioning) (Level 4) AND three years' relevant experience
Trades	Motorcycle Mechanic	National Certificate in Motor Industry (Automotive Electrical and Mechanical Engineering) (Level 4) with strand in Motorcycle OR National Certificate in Motor Industry (Motorcycle Engineering) (Level 4), OR NZ Trade Certificate in Motorcycle Engineering AND at least three years' experience
Trades	Scaffolder (Advanced)	National Certificate in Scaffolding (Level 4) with strands in Advanced Scaffolding and at least five years experience since obtaining the Level 4 Certificate
Transport	Truck Driver (General)	NZ recognised Full Class 5 Driver Licence and three years experience driving heavy combination vehicles with a gross combined weight of more than 25,000kg

Table A6.10: Native Hawaiian and Other Pacific Islanders, Civilians employed at work 16 years and over, 2006-2010, per cent

Occupation	Male	Female	Total
1. Management, business & financial workers	8.3	9.2	8.7
2. Science, engineering & computer professionals	3.7	1.5	2.7
3. Healthcare practitioner professionals	0.8	2.5	1.6
4. Other professional workers	5.6	9.2	7.3
5. Technicians	2.1	2.4	2.2
6. Sales workers	7.3	13.0	10.0
7. Administrative support workers	10.9	28.9	19.4
8. Construction & extractive craft workers	11.5	0.4	6.3
9. Installation, maintenance & repair craft workers	7.2	0.7	4.1
10. Production operative workers	6.1	2.5	4.4
11. Transportation & material moving operative workers	9.6	2.2	6.1
12. Laborers & helpers	7.6	1.8	4.9
13. Protective service workers	5.9	2.2	4.1
14. Service workers, except protective	13.5	23.6	18.2
	100.0	100.0	100.0
	107,525	95,655	203,180

Table A6.11: Number of positions held by Tongan overseas vessel crew and ships operated by Shipping Corporation of Polynesia Ltd

Position	N	Position	N
Chief Officer	2	Wiper	1
Second Officer	7	Greaser	3
Third Officer	6	Able Seaman (AB)	52
Third Engineer	2	Steward	1
Fourth Engineer	1	Ordinary Seaman	13
First Mate	1	Cook	1
Bosun	17	Cook/Steward	1
Master Mariner (MM)	6	D/TR	1
Fitter	1	E/TR	1
Oiler	1	Cadet	1
Source: Appendix 5 & 6, Vocational Training in the Maritime Sector: the Way Forward. Interim Report, November 2009			

Chapter Seven: Indicators of capacity for the Tongan labour market

The purpose of this chapter is to identify primary indicators of capacity in the Tongan labour market. These relate to the supply and demand for skills. How can these indicators be used to help ensure there is a better match between the quantity and quality of skills coming onto the labour market and the requirements of employers?

Key considerations

The starting point for identifying capacity indicators is the need to achieve some balance between demand and supply to produce better labour market outcomes. Much criticism has been made of supply-driven training systems. As ADB report Skilling the Pacific notes:

> *The demand, or employer, side is under-represented in the planning and direction of TVET systems. Similarly, communities tend not to be involved in identifying training needs for the informal sector. As a result, training operates in isolation and is supply driven ...*
>
> *A mental shift is needed. TVET should not be viewed as synonymous with education. TVET is providing service and should be demand, not supply, oriented.*[79]

Interventions on the supply side alone such as giving TVET providers more resources, restructuring their operations and applying more top-down management controls cannot by themselves deliver the labour market outcomes wanted. Systems cannot reform themselves or build new capacity if left to their own supply-side focus. Only pressure or 'demand' from end-user groups such as employers, students, parents and government can 'pull' better performance out of the system. Use of demand-side pressure on service providers has the best chance of working in cases where the means and outcomes are clearly understood and measurable at the point of delivery.[80]

An evidence-based understanding of the nature of demand for training is needed. Unexpected strong demand, particularly in the short-term, could overwhelm the supply side and start to undermine capacity. Demanders of services may seek more or better services but fail to help with the longer-term investments needed to build sustainable capacity or supply. Staff within the supplying organisations may became demoralised and opt out, in an effort to escape any blame. Service providers, for their part, could lose balance. They could either try to expand too fast or attempt to do too many things and in the process, lose coherence and capacity. Or too much latitude could be given to the service provider and the organisation may lapse back into self-serving behaviour. Persistent imbalances between demand and supply could undermine the overall performance of the service provider.[81]

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[79] ADB, 2009, Skilling the Pacific: Technical and Vocational Education and Training in the Pacific. Asian Development Bank, Manila, p 125 & 128.

[80] Heather Baser and Peter Morgan, 2008, Capacity, Change and Performance Study Report. Discussion Paper No 59B, April, European Centre for Development Policy Management, p 68.

[81] See Note 62, p 69-70.

Capacity indicators for whom?

The chapter on forecasting started with a comment on how top-down, centralised planning models of the demand for skills are no longer regarded by policy makers as necessary or useful. The current view of the World Bank and others is that: '... skills-development systems need to grow organically from below while being coordinated and fostered from above'.[82]

Three approaches to the use of indicators

A key issue in developing appropriate indicators is to know their purpose. Three approaches to the use of indicators have been identified: planned, incremental and emergent.[83] The use of indicators for planning purposes to enable a government agency to allocate and coordinate resources flowing to the training providers. This focus shapes what data are collected and by whom. This top-down management approach assumes that system-wide objectives can be clearly defined, targets can be set to meet these objectives and that training capacity can be easily shifted to meet the targets. The senior managers in the coordinating agency assume they can control and manage the process directly and that the training providers can and will respond to what is asked for.

A planned, top-down approach to service delivery is needed to some extent, if only to compete for funds within the government's budget process. However, a sole reliance on this approach requires that a number of supporting conditions hold. These include a widely shared consensus about policy and direction; the resources to pay for the support systems; and clear and achievable objectives.[84] Also needed are good activity-based accounting systems to track unit costs, outputs and outcomes.

A second approach to the use of indicators can be termed incremental. This approach is based on the principles of adaptiveness and flexibility in implementation. Strategies can still have preset objectives and goals, but they function more as guidelines than as actual fixed targets. This approach works best in situations where conditions are unstable and the choice of strategy is difficult to clarify. Senior managers in the coordinating agency may be uncertain about a number of factors affecting the capacity and performance of the service providers, such as institutional constraints or staff commitment. Indicators are needed about the operation of the service providers to learn what works under different conditions. This allows a more responsive system to be developed through trial and error. This is especially important where there are conflicting interests and attitudes on the part of service providers.[85]

The third approach to the use of indicators is called emergent. As discussed above, a planned change relies on good system-wide data, prediction, goal-setting, hierarchical structures and top-down strategy. An incremental approach relies on information which enables adaptiveness, learning and adjustment. The emergent approach is better suited to situations where the behaviour of service providers is difficult to manage in a top-down fashion. In these situations, the driving forces for change are relationships, interactions and local energy.

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[82] World Bank, 2012, World Development Report 2013: Jobs. Washington DC, Box 5.8, p 177

[83] The following discussion of these approaches and the use of indicators draws heavily on Heather Baser and Peter Morgan, 2008, Capacity, Change and Performance Study Report. Discussion Paper No 59B, April, European Centre for Development Policy Management, pp 68-80

[84] See Note 62, p 77.

[85] See Note 62, p 78.

A directive, top-down approach has real limitations because often there are too many unknowns. The best starting point for achieving a close link between training providers and employer needs is likely to be at the local area or community level. This is where face-to-face relationships and trust are the most robust and where changes can be more easily achieved through the efforts of individuals.

Growing the skills system from below

Forming a group of interested parties, which may involve senior teachers from a secondary school, training providers and employers at a local level, can make the most of a shared sense of meaning or values and a collective identity. A local group also offers those involved a good sense of a manageable area of joint activity. The group will also need some basic rules of conduct, some resources to track performance, and a protected space that allows for some freedom of action.

The focus of this approach is on a bottom-up coordination by nurturing relationships and then waiting for results and capabilities to emerge. The usual top-down mechanisms of clear objectives, explicit strategies, scheduled activities, and targets are not applied. The aim is to use indicators to develop local capacity to coordinate training to maximise employment outcomes, making good use of community cohesion and energy.

The emergent approach to the use of indicators is to make them part of a process of fostering local level coordination. These indicators could produce variable results as the participants take time to develop the skills needed to sort out problems. The emergent approach is not good at getting a set of tasks done in a short period of time. The approach is likely to fit uneasily with donors and senior managers in government who want to see more control, direction and accountability for results.

Operating at different levels

In practice, indicators are needed to operate at different levels of activity. Data are needed to assist with the central allocation of funds on the basis of clear criteria and objectives. Information is also needed by a central agency to respond to the differences in capacity between training providers and to move each in the desired direction to meet the skills needs of employers. Finally, data should be collected and used at the local level to enable effective connections to be made between supply and demand. These data should be about employer skill needs and the labour market outcomes of TVET graduates.

Supply side indicators

These indicators are the standard measures required for reporting system activity. They are used in the annual reports of institutions responsible for funding and providing the services. They are relatively easy to collect and report on, provided a template and reporting channels are specified.

Topic	Indicators		Data source
	Inputs	Outputs	
Supply of skills	School enrolments by level of secondary education	School completion by education level, overall and for each school	Admin data
	Enrolments by post-secondary qualification	Number of graduates and non-completers by qualification for each training provider	Admin data
	Proportion of working age population with post-school qualifications by sex & age		Household Income & Expenditure Surveys, Census

Demand side indicators

Demand side indicators are new to most TVET systems because this focus has been largely absent. This applies especially to the provision of regular indicators of the demand for skills. Some existing official surveys such as Household Income & Expenditure Surveys offer some useful information. However, for most indicators of skills demand, new data sources are needed. These include a regular survey of employers. Also valuable is face-to-face feedback to training providers from local employers.

	Indicators		Data source
	Short-term outcomes	Longer term impact	
Demand for skills	Changes in proportion of working age population in full-time paid work by sex & age group		Household Income & Expenditure Surveys, Census
	Number of advertised job vacancies per three months: ongoing or temporary, required/desirable qualification , work experience, by industry sector, type of employer		Newspaper & radio job advertisements
	Actual skills (specific & general) sought by employers	Improved rates of employment in middle occupations Lower cost of training per matched employment outcome	Yearly survey of enterprises or information sought from a local group of employers for specific training providers Direct face-to-face feedback from employers
	Change in median wages by occupation at three digit level at two points in time		Household Income & Expenditure Surveys, provided occupation data collected to three-digit level

	Indicators		Data source
	Shorter-term outcomes	**Longer term impact**	
Demand for skills	Type of training needed by enterprises eg short courses, training on-the-job	Feedback from employers on TVET graduates	Yearly survey of enterprises or information sought from local groups of employers for specific training providers Direct face-to-face feedback from employers
	Education level and type of job of employees by firm characteristics (employment size, sector, export orientation)		Yearly survey of enterprises or information sought from a local group of employers for specific training providers
	Need for training in the informal economy	Effect on incomes of training supported activities in informal economy	Survey of programs delivering services to the informal economy or focus group discussions with people involved in a particular activity
		Total employment, ongoing, temporary, full-time, part-time by education and age, overall, by occupation, by sector & occupation to three or four-digit level	Census for local areas and sectors
	More Tongans access skilled migrant streams for NZ & Australia, each year		Immigration authorities in Australia & New Zealand
		Employment & wage outcomes for Tongan migrants by occupation & qualification level in New Zealand, Australia & USA to show Tongan born migrants have more skilled & better paid jobs than at present	Longitudinal Immigration Survey: New Zealand (LisNZ); Longitudinal Survey on Immigrants to Australia (LSIA); Australian census 2011, NZ census 2012

Indicators of skills mismatches

Information on whether the skills being supplied are meeting the needs of employers is crucial to the effective operation of the labour market. This information needs to be collected by the training providers themselves in face-to-face discussions with employers. It also needs to be collected at a more systematic level to help government as the funder of skills training to assess whether the training is effective in the workplace.

	Indicators		Data source
	Short-term outcomes	**Longer term impact**	
Skill mismatches	Difficulties in finding the right skills for skilled and unskilled occupations according to employers, by firm characteristics	Employers satisfaction levels with efforts of training providers to form links with workplaces Number of foreign workers by occupation	Yearly survey of enterprises or information sought from local groups of employers for specific training providers. Direct face-to-face feedback from employers
	Gaps in actual skills of existing employees, according to employers	Employers' perspectives on the quality of newly hired graduates, by firm characteristics and education level	Yearly survey of enterprises or information sought from local groups of employers for specific training providers. Direct face-to-face feedback from employers
		Employment outcomes in Tonga and overseas for TVET graduates and course non-completers	Graduate tracer surveys of each major training course, conducted by the training provider, centrally or by local area group Questions in enterprise survey about relevance of training of new graduates employed

Attachment 1: Scope of the Review

This Review of the demand for skills training in the Tongan and Regional Labour Markets addresses the following ten key tasks.

	Key tasks of the Review
1	Provide a comprehensive mapping and statistical analysis of the Tongan labour market (2012) including analysis of public and private sector employment trends
2	Provide statistics and other evidence of Tongan participation in regional and international labour markets
3	Describe the labour market dynamics in Tonga, (and the wider Pacific region) including an analysis of the flow of skilled personnel entering and leaving the labour market annually
4	Estimate the numbers of TVET graduates in demand by specific industry sectors
5	Estimate current and projected employment-based migration patterns
6	Identify possible emerging opportunities in regional and international labour markets
7	Identify current workforce planning being undertaken in both the public and private sectors
8	Provide an analysis of opportunities and barriers faced by women seeking to enter into skilled employment and remain in the Tongan workforce
9	Provide projections on demand for skilled personnel emanating from current or planned large scale infrastructure projects
10	Identify primary indicators of capacity in the Tongan labour market

The focus of the primary and secondary data collection for the review has been on three economic sectors: the formal and informal economy in Tonga and on the international labour markets traditionally favoured by Tongan migrants. A range of data sources have been used for each sector which are outlined in the table below:

Identifying skills demand in	Data sources
Formal economy	Official statistics: Census 2006 & 2011; Report on the Tonga Labour Force Survey 2003
	Results of TVET Graduate 2007-2010 Tracer Survey (April 2011)
	Special survey of larger enterprises
	Other studies eg tourism training needs analysis (2009), Report on Training Options for the Members of WISE Tonga Inc. August 2012
	Survey of job vacancies in newspapers
	Current & planned infrastructure projects
Informal economy	Special survey of key informants in fringe urban & rural locations
International labour markets	Australian & NZ census data on occupations of Tongan born residents and Immigration lists of skills shortages
	USA data on occupations of Pacific Island communities, changing education profile of migrant to US, with a focus on nurses

Defining the focus

The labour market review will aim to collect information on four types of skills imbalances.

1. Skill shortages experienced by employers. This refers to a situation where employers are not able to recruit people with appropriate skills from the domestic labour market for jobs that they want to fill.
2. Skills gaps in existing workers. Employers regard their workers as not sufficiently skilled to do the work required of them.
3. Skills mismatch. This refers to job incumbents not making use of all or most of their acquired skills.
4. Lack of employability skills. This imbalance makes employers reluctant to employ educated young people because they lack relevant work experience.

Skills supplied by TVET

The purpose of the review is to provide information on skills in demand for use by TVET providers. This means that the focus of the review is on the occupations associated with sub-degree qualifications such as diploma and certificate. These occupations using the International Standard Classification of Occupations (ISCO) at the one digit level are listed below.

International Standard Classification of Occupations Major Groups 3-7
3. Technicians and associate professionals
4. Clerical support workers
5. Service and sales workers
6. Skilled agricultural, forestry and fishery workers
7. Craft and related trades workers

Excluded occupations

The review excludes the occupations that usually require on-the-job training or formal training within an enterprise without a formal certificate. These occupations include plant & machine operators including stationary plant & machine operators, assemblers, and drivers & mobile plant operators. In this group are also 'elementary' occupations. There are: cleaners and helpers; agricultural, forestry & fishery labourers; labourers in mining, construction, manufacturing & transport; food preparation assistants; street & related sales and service workers; and refuse workers & other elementary workers.

Focus on accredited training

The focus of the review is also on accredited skills training as delivered by the TVET sector or within enterprises. Accredited training refers to Tongan Certificate Levels L1 to L4 and to Diploma Level 5. Certificates 1, 2 and 3 can be benchmarked against the current school qualifications of the Tongan School Certificate (level 1); Pacific Secondary Certificate (level 2); and the South Pacific Form Seven Certificate (level 3).[86]

Key principles to underpin the review

- Use available data from a number of sources
- Recognise the limitations of each data source
- Piece together a picture based on assessment of strengths and weaknesses of data
- Recognise need for policy change to create demand for skills training

Risks and limitations of the available data

Estimating the current and future demand for skills training is a complex and uncertain

[86] Appendix 1: Qualifications definitions, Tonga Qualifications Framework Policies, Tonga National Qualifications and Accreditation Board, 17 September 2009.

undertaking. The concept of skill is itself hard to measure and substitute measures such as occupation and qualifications are used widely to try to address this problem. However, these statistical terms are in many instances inadequate for describing the underlying reality of jobs which can vary widely from enterprise to enterprise in terms of the sets of tasks and skills required.

This complexity means that no one source of information on the skill needs of the economy provides a complete picture. This holds no matter how comprehensive that information source may appear.

Limits of Census data

The Tonga National Population and Housing Census 2011 covers the total population. It, therefore, has comprehensive information on occupations, sectors of employment and qualifications. However, from a demand for skills perspective, it only collects information from individuals and not from enterprises. It also provides only a snapshot picture of the population at the time of the census and only allows comparisons with a similar one-off picture taken five years earlier.

Limits of administrative data

Administrative data such as the occupations of foreign work permit holders can be a valuable source of information about the current demand for skills. However, it has to be recognised that these data are not collected for this purpose. The accuracy of data on the occupations of foreign workers can be wanting if it is left to the applicant to describe the occupation of the foreign worker, without reference to a standard list of occupations such as that provided by ISCO. As well, there is the risk that an employer may also misspecify the occupation to increase the chances of gaining government approval.

Limits of information gained from surveying employers

Asking employers directly about their skills needs involves another set of risks. Many employers may be unclear about their current and future skills requirements. Small employers, in particular, may not have written job descriptions of the duties and competencies required. They may rely on finding someone they trust who is seen as a good worker and prefer to train them on-the-job to do the required work. These enterprises may be operating in a low-wage, low-skill setting where they have little incentive to seek and pay for higher level skills. These enterprises may have little interest in identifying their skill needs beyond concerns about the work discipline of workers available at low wage rates.

The low-wage, low-skill setting of the construction sector may also mean that employers do not realise that they need certain managerial and contract-related skills to operate effectively. Many construction firms, for example, do not know how to estimate the costs of specific elements of a project. Hence they are likely to quote a total cost for a tender that is too low to cover the true cost of the work to be done. Nor do they know how to estimate the costs of unexpected variations to the contract. Direct questions to employers may not reveal real skill needs. Only an in-depth study can reveal how to improve the performance of firms in the industry, and identify the supporting conditions and skills needed.

Employers in the private sector may have little advance knowledge of what their demand for

skills might be. This applies especially in industries dependent on the awarding of contracts such as construction. In many cases, a construction firm's demand for skills depends on winning contracts. So asking a construction firm about their future skills needs may simply elicit a reply that it all depends on if they get a contract and its size and nature. In other sectors such as tourism and hospitality, the demand for skills may also be unpredictable. It may depend on variable factors such as the state of the weather, the economic conditions in the countries sending tourists and the competitive pricing of other tourist operators in-country and in the region.

Limits of forecasting skills

Predicting the future need for skills is difficult to say the least. Using census data five years apart to identify which occupations have grown, declined or remained static provides information about the current demand for skills as reflected in the data on occupations and qualifications. However, future demand cannot be simply projected on the basis of past trends. Conditions in the world economy may be very different in the next three to five years. The fallout from the greatest downturn in the world economy in 2008 since the 1930s may still be having a major impact on developing and developed countries in 2015 and beyond. There is some scope to identify future demand for skills from planned infrastructure investment. Also, an increase in demographic pressures will also have implications for basic education and health care services funded by governments.

Making the most of available data

Bringing together different sources of information to provide a composite picture, called triangulation, helps to offset the limitations of any one data source. However, this composite picture needs to be checked regularly and updated when new information becomes available. For example, in relation to a future development such as the impact of the new fibre optic cable link to Tonga, it may not be possible to estimate the type of skills or the number of jobs generated because it will depend on what type of businesses will now see the benefit in taking advantage of high speed Internet connection.

Another risk to the review is the nature of the economy dominated by a service sector responding to weak demand.

Attachment 2: A profile of the occupations in the major sectors of the economy

The following notes highlight the major features of the occupational structure of each of the major sectors of the economy. The profiles are based on the 2011 census results.

Middle Occupations - public administration

The number of job holders in the associate professional and technician level occupations is small compared with the number of job holders in the clerical occupations. In particular, these occupations may have insufficient numbers to cope with job turnover: ship & aircraft controllers & technicians; Medical & pharmaceutical technicians; Nursing & midwifery associate professionals; and Veterinary technicians & assistants.

Middle Occupations - Health

The low numbers (less than 5 in each case) of Administrative & specialised secretaries and ICT operations & user support technicians are worth noting.

Main occupations - Accommodation, food & beverage and tourist travel agency services

Apart of from a large number of chefs who fall into the category of Artistic cultural & culinary associate professionals, and a small number of Administrative & specialised secretaries, there are few or no job holders with professional or middle-level skills in finance or ICT.

There are 46 Travel attendants conductors & guides and 18 client information workers in the two sectors. However, there are few personal care workers and hairdressers and beauticians catering for tourists. Similarly, there are no child care workers & teachers' aides which suggests that the tourist industry is not family friendly. There are few car or van drivers or ships' deck crews who are focused on tourists.

Main occupations - Wholesale & retail trade & repair of motor vehicles & motorcycles

The two main occupations are: Engineering professionals (excluding electrotechnology) and Machinery mechanics & repairers. However, there are middle-skill jobs: Physical & engineering science technicians; Financial & mathematical associate professionals Administrative & specialised secretaries; and ICT operations & user support technicians.

Main occupations - Construction & specialised construction industries

The largest occupation group are those with basic building skills: building frame & related trades workers. Job holders involving building finishers are less than one-in-ten of the combined building trades. The construction industry appears to have too few managers, engineers, surveyors, accountants, technicians, supervisors, painters and welders compared with the large number of trades workers. This probably reflects the project-based nature of the work, and the lack of continuity in the work so it is difficult for all but a few larger constructions firms to retain a core of skilled personnel.

Main occupations - repair machinery

The two main occupations are: Engineering professionals (excluding electrotechnology) and Machinery mechanics & repairers. There appear to be fewer Electrotechnology engineers, physical & engineering science technicians and electrical equipment installers & repairers than could be expected.

Main occupations - Electricity gas steam & air conditioning supply

The largest number of job holders are sales workers and electrical equipment installers & repairers**.** The number of Engineering professionals is low. However, middle-level skills are prominent in the three occupations: Physical & engineering science technicians; Process control technicians; and Administrative & specialised secretaries. However numbers with ICT expertise at the professional and technician level are low.

Main occupations - Financial & Insurance Services plus activities auxiliary to financial service & insurance activities

The occupations with the largest number of job holders in Finance and Insurance Services are: Financial & mathematical associate professionals and tellers. Business services managers, finance professionals and professional service managers are also important. However, those with ICT expertise are few i number: Software & applications developers & analysts Database & network professionals. Lawyers and economists are also few in number.

Main occupations - Communications

Under the broad umbrella of Communications are the following: Publishing activities; Video & television programme production sound recording & music publishing activities; Programming & broadcasting activities; Telecommunications; & Computer programming consultancy & related activities; and Information service activities. No one occupation stands out as being much larger than the others. ICT skills are important and involve these occupations in particular: ICT service managers; Software & applications developers & analysts Database & network professionals; and ICT operations & user support technicians. Also important are the middle skill occupations of Telecommunications & broadcasting technicians and Physical & engineering science technicians. The numbers in the trade-level occupation of Electronics & telecommunications installers & repairers are significant.

Main occupations - Land, Water & Air transport; Warehousing & support activities for transportation

The main jobholders in land, water and air transport are not unexpectedly: Car van & motorcycle drivers; Heavy truck & bus drivers; and Ships' deck crews & related workers. At the middle skill level are Ship & aircraft controllers & technicians. Client information workers and Numerical clerks are also prominent. Protective services workers are present in significant numbers. The size of the domestic maritime labour market is about 160 jobs, comprising 58 Ships' deck crews & related workers and about 100 Ship’s officers and engineers.

Middle Occupations - public administration	Total
Physical & engineering science technicians	9
Construction supervisors	8
Life science technicians & related associate professionals	31
Ship & aircraft controllers & technicians	7
Medical & pharmaceutical technicians	7
Nursing & midwifery associate professionals	12
Veterinary technicians & assistants	*
Other health associate professionals	27
Financial & mathematical associate professionals	12
Sales & purchasing agents & brokers	7
Business services agents	7
Administrative & specialised secretaries	39
Regulatory government associate professionals	143
Legal social & religious associate professionals	7
Sports & fitness workers	5
Artistic cultural & culinary associate professionals	6
ICT operations & user support technicians	25
Telecommunications & broadcasting technicians	*
General office clerks	96
Secretaries (general)	75
Keyboard operators	80
Tellers money collectors & related clerks	10
Client information workers	50
Numerical clerks	120
Material-recording & transport clerks	8
Other clerical support workers	62
* = less than 5 Total	853

Middle Occupations - health	Total
Nursing and midwifery professionals	217
Other health professionals	34
Medical & pharmaceutical technicians	40
Nursing & midwifery associate professionals	40
Traditional & complementary medicine associate professionals	*
Other health associate professionals	34
Administrative & specialised secretaries	*
ICT operations & user support technicians	*
* = less than 5 Total	372

Main occupations - Accommodation, food & beverage	Total
Hotel & restaurant managers	100
Other services managers	14
Artistic cultural & culinary associate professionals	66
Administrative & specialised secretaries	5
Client information workers	45
Numerical clerks	13
Material-recording & transport clerks	*
Other clerical support workers	6
Travel attendants conductors & guides	5
Cooks	199
Waiters & bartenders	140
Hairdressers beauticians & related workers	*
Building & housekeeping supervisors	21
Other personal services workers	*
Street & market salespersons	7
Shop salespersons	12
Cashiers & ticket clerks	15
Other sales workers	*
Child care workers & teachers' aides	0
Personal care workers in health services	0
Protective services workers	30
Building frame & related trades workers	11
Food processing & related trades workers	14
Domestic hotel & office cleaners & helpers	103
* = less than 5 Total	819

Main occupations - tourist travel agency services	Total
Other services managers	6
Finance professionals	*
Administration professionals	*
Sales marketing & public relations professionals	*
Database & network professionals	*
Ship & aircraft controllers & technicians	*
Administrative & specialised secretaries	*
General office clerks	*
Tellers money collectors & related clerks	*
Client information workers	18
Numerical clerks	5
Travel attendants conductors & guides	41
Shop salespersons	*
Cashiers & ticket clerks	*
Car van & motorcycle drivers	*
Ships' deck crews & related workers	*
* = less than 5 Total	91

Main occupations - Wholesale & retail trade & repair of motor vehicles & motorcycles	Total
Engineering professionals (excluding electrotechnology)	25
Finance professionals	7
Physical & engineering science technicians	3
Financial & mathematical associate professionals	*
Administrative & specialised secretaries	6
ICT operations & user support technicians	*
Clerical support workers	18
Numerical clerks	11
Material-recording & transport clerks	*
Salespersons	26
Painters building structure cleaners & related trades workers	15
Sheet & structural metal workers moulders & welders	*
Machinery mechanics & repairers	109
Office cleaners & helpers	*
Vehicle window laundry & other hand cleaning workers	*
* = less than 5 Total	228

Main occupations - Construction & specialised construction industries	Total
Business services & administration managers	*
Construction managers	36
Professional services managers	5
Other services managers	*
Engineering professionals (excluding electrotechnology)	*
Electrotechnology engineers	*
Architects planners surveyors & designers	10
Finance professionals	*
Physical & engineering science technicians	26
Mining manufacturing & construction supervisors	16
Administrative & specialised secretaries	*
Secretaries (general)	9
Numerical clerks	13
Material-recording & transport clerks	*
Building frame & related trades workers	1095
Building finishers & related trades workers	81
Painters, building structure cleaners & related trades workers	35
Sheet & structural metal workers, moulders & welders	15
Blacksmiths toolmakers & related trades workers	35
Machinery mechanics & repairers	8
Electrical equipment installers & repairers	*
Car van & motorcycle drivers	5
Heavy truck & bus drivers	7
Mobile plant operators	*
Mining & construction labourers	87
* = less than 5 Total	1483

Main occupations - repair machinery	Total
Engineering professionals (excluding electrotechnology)	38
Electrotechnology engineers	*
Physical & engineering science technicians	16
ICT operations & user support technicians	*
Building finishers & related trades workers	6
Painters building structure cleaners & related trades workers	9
Sheet & structural metal workers moulders & welders	6
Blacksmiths toolmakers & related trades workers	*
Machinery mechanics & repairers	222
Electrical equipment installers & repairers	21
Electronics & telecommunications installers & repairers	8
* = less than 5 Total	326

Main occupations - Electricity gas steam & air conditioning supply	Total
Managers	13
Engineering professionals (excluding electrotechnology)	*
Electrotechnology engineers	*
Finance professionals	7
Sales marketing & public relations professionals	*
Software & applications developers & analysts	*
Database & network professionals	*
Physical & engineering science technicians	19
Process control technicians	10
Administrative & specialised secretaries	21
ICT operations & user support technicians	*
General office clerks	*
Secretaries (general)	*
Keyboard operators	*
Tellers money collectors & related clerks	7
Client information workers	6
Numerical clerks	11
Shop salespersons	5
Cashiers & ticket clerks	5
Other sales workers	97
Protective services workers	11
Building finishers & related trades workers	*
Machinery mechanics & repairers	*
Electrical equipment installers & repairers	72
Electronics & telecommunications installers & repairers	*
Other stationary plant & machine operators	*
Car van & motorcycle drivers	8
Heavy truck & bus drivers	5
Ships' deck crews & related workers	*
Domestic hotel & office cleaners & helpers	*
Other elementary workers	18
* = less than 5 Total	348

Main occupations - Financial & Insurance Services plus activities auxiliary to financial service & insurance activities	Total
Business services & administration managers	17
Sales marketing & development managers	*
ICT service managers	*
Professional services managers	26
Other services managers	5
Mathematicians actuaries & statisticians	*
Finance professionals	54
Administration professionals	5
Sales marketing & public relations professionals	9
Software & applications developers & analysts	6
Database & network professionals	*
Legal professionals	*
Social professionals eg economist	*
Financial & mathematical associate professionals	115
Sales & purchasing agents & brokers	15
Administrative & specialised secretaries	14
Regulatory government associate professionals	*
ICT operations & user support technicians	*
General office clerks	10
Secretaries (general)	16
Tellers, money collectors & related clerks	155
Client information workers	21
Numerical clerks	41
Shop salespersons	25
Protective services workers	44
Car van & motorcycle drivers	18
Office cleaners & helpers	23
Other	23
* = less than 5 Total	660

Main occupations - Communications 1	Total
Managing directors & chief executives	*
Business services & administration managers	5
ICT service managers	9
Other services managers	11
Electrotechnology engineers	19
Designers	*
Finance professionals	15
Sales marketing & public relations professionals	54
Software & applications developers & analysts	10
Database & network professionals	6
Legal professionals	1
Librarians archivists & curators	1
Authors journalists & linguists	15
Creative & performing artists	40
Physical & engineering science technicians	24
Financial & mathematical associate professionals	6
Administrative & specialised secretaries	15
Artistic cultural & culinary associate professionals	6
ICT operations & user support technicians	64
Telecommunications & broadcasting technicians	48
General office clerks	9
Secretaries (general)	*
Keyboard operators	10
Tellers money collectors & related clerks	6
Client information workers	60
Numerical clerks	24
Material-recording & transport clerks	*
Other clerical support workers	11
Street & market salespersons	21
Shop salespersons	21
Cashiers & ticket clerks	10
Other sales workers	44
Protective services workers	18
Printing trades workers	*
Electrical equipment installers & repairers	5
Electronics & telecommunications installers & repairers	27
Car van & motorcycle drivers	10
Domestic hotel & office cleaners & helpers	11
Other	33
* = less than 5 Total	673

Communications includes: Publishing activities; Video & television programme production sound recording & music publishing activities; Programming & broadcasting activities; Telecommunications; & Computer programming consultancy & related activities; Information service activities

Main occupations - Land, Water & Air transport; Warehousing & support activities for transportation	Total
Managing directors & chief executives	5
Business services & administration managers	8
Other services managers	14
Engineering professionals (excluding electrotechnology)	11
Electrotechnology engineers	*
Architects planners surveyors & designers	*
Finance professionals	17
Administration professionals	*
Sales marketing & public relations professionals	*
Database & network professionals	*
Physical & engineering science technicians	*
Supervisors	*
Ship & aircraft controllers & technicians	112
Financial & mathematical associate professionals	*
Sales & purchasing agents & brokers	8
Business services agents	9
Administrative & specialised secretaries	17
Regulatory government associate professionals	11
Artistic cultural & culinary associate professionals	*
ICT operations & user support technicians	*
General office clerks	10
Secretaries (general)	8
Client information workers	49
Numerical clerks	26
Material-recording & transport clerks	7
Other clerical support workers	18
Travel attendants conductors & guides	12
Cashiers & ticket clerks	26
Protective services workers	83
Building frame & related trades workers	6
Sheet & structural metal workers moulders & welders	*
Machinery mechanics & repairers	15
Electrical equipment installers & repairers	*
Electronics & telecommunications installers & repairers	*
Car van & motorcycle drivers	184
Heavy truck & bus drivers	63
Mobile plant operators	10
Ships' deck crews & related workers	58
Domestic hotel & office cleaners & helpers	16
Transport & storage labourers	55
Other	30
* = less than 5 Total	909