# 3

# LANDSCAPE AND ARCHITECTURE OF TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING IN THE PACIFIC

This chapter consolidates information from the 13 countries; explains existing TVET systems in the Pacific; and identifies TVET patterns, dimensions, and constraints. It does not analyze TVET—that comes in Chapter 4.

## Overview

The structure of TVET in most PICs is of three types: school-based vocational education, vocational training institutions, and postsecondary technical training. Almost all countries attempt to provide some prevocational courses at the secondary level. TVET is often administered by different organizations, which can lead to challenges in coordination. Several countries have national training councils. Apprenticeship training is strong in the larger countries. Maritime training is an important specialization for the region. Private training institutions constitute an important, although largely unsurveyed, part of providing training. Church organizations are important suppliers of training in many countries. Public financing for TVET accounts for 2–4% of public spending on education and training. Some nonpublic financing supports TVET at all levels.

This chapter describes the current system of TVET in the Pacific and identifies their constraints according to the following 10 topics:

- Organization and administration,
- Prevocational education,
- Vocational training,
- Postsecondary technical training institutes,
- Apprenticeship training,
- Maritime and fisheries training,
- Private training providers,
- Trade testing,
- Rural and informal sector training, and
- TVET finance and expenditures.

## Organization and Administration

The organization and administration of TVET presents a diverse picture country by country in the Pacific (Table 3.1).

Several patterns exist. First, ministries and departments of education administer vocational programs in secondary schools. This applies also in decentralized systems. For example, in the FSM, four state departments of education handle all education and training in their respective states, with the national department responsible mainly for policy and standards. In PNG, the National Department of Education supports, but the provincial departments of education directly administer vocational centers. Second, postsecondary technical institutions may be administered from three separate sources.

**Table 3.1: Responsibilities for TVET in the Pacific**

| | Country | Secondary Schools | Postsecondary | Others |
|---|---|---|---|---|
| 1. | Cook Islands | Ministry of Education | Department of National Human Resources Development | |
| 2. | FSM | State departments of education | College of Micronesia – semi-independent | |
| 3. | Fiji Islands | Ministry of Education | Fiji Institute of Technology (largely autonomous) | training and productivity authority of the Fiji Islands |
| 4. | Kiribati | Ministry of Education and Youth Services | | Ministry of Labor, Human Resource Development Department |
| 5. | Nauru | Department of Education | — | — |
| 6. | Palau | Ministry/Bureau of Education | Bureau of Education and Palau Community College Board of Trustees | |
| 7. | PNG | Provincial departments of education | National Department of Education | Department of Labor and Industrial Relations, National Training Council, and National Apprenticeship and Training Board |
| 8. | RMI | Department of Education | College of the Marshall Islands– semi-independent | National Training Council |
| 9. | Samoa | Ministry of Education, Sports, and Culture | National University of Samoa, Institute of Technology—largely autonomous | Samoa Qualifications Authority |
| 10. | Solomon Islands | Ministry of Education and Human Resource Development | Solomon Islands College of Higher Education | Ministry of Commerce, Industry, and Employment |
| 11. | Tonga | Ministry of Education, Culture, and Women | Ministry of Training, Employment and Youth Services | Tongan National Qualifications and Accreditation Board– planned |
| 12. | Tuvalu | Ministry of Education and Sport | — | — |
| 13. | Vanuatu | Ministry of Education | VIT–separate board | Vanuatu National Training Council<br>Provincial training boards |

— = data unavailable.
FSM = Federated States of Micronesia, PNG = Papua New Guinea, RMI = Republic of the Marshall Islands, TVET = technical and vocational education and training, VIT = Vanuatu Institute of Technology,
Sources: Background and in-depth reports.

Some fall under ministries or departments of education. Others have separate ministries or departments such as the Cook Islands and Tonga. In addition, the Samoa Qualifications Authority (SQA) is responsible for coordinating postsecondary training. Some tertiary institutions are largely autonomous and have boards that manage their own affairs—FIT and National University of Samoa, Institute of Technology (NUSIOT)—and, to a certain extent, the community colleges in the FSM, RMI, and Palau. Third, a diverse set of other institutions play important roles in administering the provision of skills training. These include national training councils, national qualification bodies, and other ministries.

Three national training councils operate in the Pacific:

• In PNG, the National Training Council (NTC) under the Department of Labor and Industrial Relations, established in 1991, regulates private training providers, coordinates public and enterprise training, and administers scholarships. It does not award qualifications.

• In the RMI, NTC, established in 1981, performs a wide range of functions. It advises on, coordinates, and regulates training; develops information about training; finances training through a special fund; establishes standards, tests trainees, and awards certificates.

• The Vanuatu National Training Council (VNTC) became operational in 2003. Its purpose is to promote and coordinate training, and raise quality by establishing standards for registered providers. VNTC is assisted by six provincial training boards that help identify training needs and track training providers.

Two countries have, or soon will have, national qualification bodies—Samoa and Tonga. The purposes are mainly quality assurance such as establishing qualification frameworks, setting qualification standards, assessment, and accreditation. In addition, the aim of SQA is to coordinate postsecondary providers and to give policy advice on strategies and priorities for postsecondary TVET. A separate TVET organization is also planned for the Fiji Islands.

Other key institutions in Pacific TVET include the Ministry of Labor, Human Resource Development Department in Kiribati, the Department of Labor and Industrial Relations in PNG, and the Ministry of Commerce, Industry, and Employment in Solomon Islands.

One significant organization for skills development stands apart in the Pacific—the Training and Productivity Authority of Fiji (TPAF) under the Ministry of Youth, Sports, and Employment Opportunities and Productivity. TPAF is unique in the Pacific. It has its own board, about 190 full-time staff, and its own sources of financing through a payroll levy and fees for training. TPAF provides skills training to both youth and employed workers, administers trade tests, and assists enterprises to build their productivity (see the Fiji Islands report).

Of course, constraints exist. The governing boards and councils of various TVET entities tend to have weak representation from the private sector and employers.

• In the Fiji Islands, the TPAF board under the Minister of Labor has 5 of 14 (36%) members representing employers. The exception, FIT, reports that 80% of its 12-member council represent nongovernment actors.

• In PNG, the 15-member board of NTC has heavy government representation, as does the National Apprenticeship and Trade Testing Board (NATTB).

• In RMI, NTC has seven members, of whom two represent the private sector (29%).

• In Samoa, the SQA board has nine members, including four employer representatives.

• In Tonga, the National Qualifications and Accreditation Board will have seven members, including three nongovernment representatives.

• In Vanuatu, VNTC has eight members on its board, only one of whom comes from the private sector.

Three countries reportedly have issues in terms of coordination among major TVET organizations—the Fiji Islands (Ministry of Education [MOE], FIT, and TPAF); PNG (NTC, NATTB, and the TVET Division of the National Department of Education [NDOE]); and Solomon Islands (Ministry of Education and Human Resources Development [MEHRD] and Ministry of Commerce, Industries, and Employment [MCIE]).

In addition, the following constraints and issues were reported.

• No formalized consultative process allows the private sector, churches, and civil society to articulate their training needs or consult on government policies, plans, or agenda for reform (FSM).

• NTC in PNG reports that its 25 staff are insufficient for it to carry out its functions properly. In addition, NTC lacks expertise in assessing institutions, courses, and trainers; and lacks the power to enforce. A lack of funding also prevents staff from making field visits to monitor the institutions it is supposed to supervise.

• Strategies and work programs are lacking to implement TVET policies (PNG MOE).

• Research and evaluation on TVET operations are lacking. Staff and funding have not been provided for these functions (PNG MOE).

• Staff are needed to carry out wide-ranging functions (RMI NTC).

• In Vanuatu, the VNTC Act has shortcomings, including insufficient representation of employers, and an inability to register institutions (as opposed to accrediting courses).

## Prevocational Education

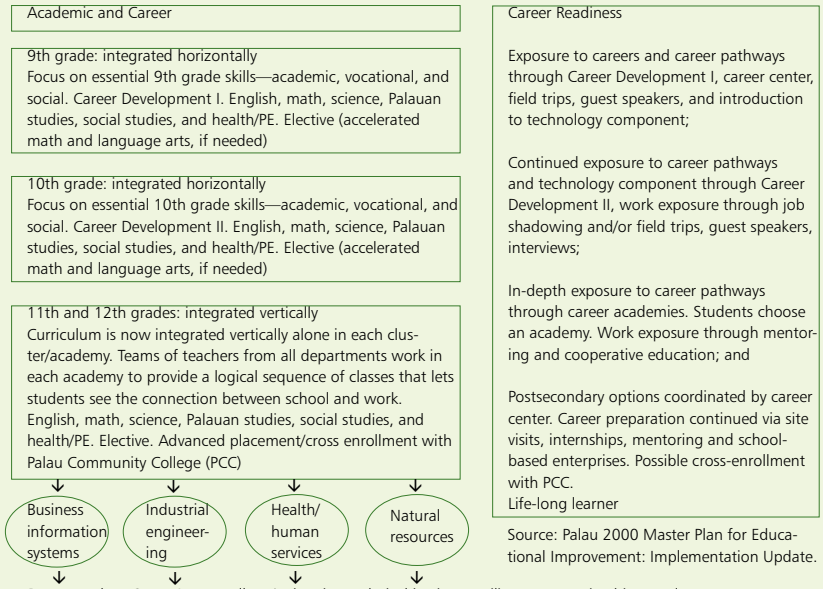
The purpose of prevocational education is to expose students to basic skills that will interest them in pursuing a more specialized vocational training and will provide them with some rudimentary skills useful in the workplace or self-employment. It is not preparation for employment. Virtually all countries in the Pacific provide some form of practical, prevocational courses in all or some secondary schools. The pattern ranges from all schools (the Fiji Islands and Palau) to only a few schools (PNG and Vanuatu). Typically, home economics, industrial arts, and agriculture are compulsory in lower secondary with more specialized, optional courses at the upper secondary level. Either prevocational courses are not examined or the examinations do not count toward advancement to the next level (as in Solomon Islands). The Pacific Regional Initiatives for the Delivery of Basic Education

(PRIDE) Project, based at the University of the South Pacific (USP), is helping introduce or strengthen prevocational courses in Nauru and Palau. The schools that implement these courses best tend to be religious with considerable tradition and expertise in the subjects, e.g., Don Bosco (PNG, Fiji Islands, and Solomon Islands). Palau High School has a successful system of integrating practical courses with academic subjects (Box 3.1).

**Box 3.1: Palau High School—School-to-Work Model**

Palau is probably one of the few countries in the Pacific that can highlight a good model of vocationalization of secondary education. Palau High School's school-to-work model includes school-based teaching and work-based activities. Following 2 years with career development courses, students in years 3 and 4 are required to enroll in one of four career academies and take six courses. The career academies are agriculture, business information, health and human services (tourism and hospitality), and industrial engineering (construction and automotive technology). Students take three academic classes and one or two vocational–technical courses in block scheduling each semester to develop workplace skills. This is complemented by workplace learning, including 6 hours of job shadowing (following and observing a person at work—2nd year), 40 hours of job mentoring (3rd year), 380 hours of career practice (4th year), and 8 weeks of summer work experience. The workplace learning component is supervised by local employers. The following diagram shows the career pathways model for Palau High School.

Career Pathways Model for Palau High School




Source: Palau 2000 Master Plan for Educational Improvement: Implementation Update.

The career academies have graduated about 500 students up to 2006, 33% in business, 30% in tourism and hospitality, 27% in industrial fields, and 10% in agriculture. Graduates are prepared for two options: immediate employment or to continue to the Palau Community College in the same or related fields of study.

Source: Takashy, 2007a.

The Fiji Islands has the most extensive system of prevocational education in its secondary schools, including 45,000 students in forms 3–4 and 33,000 students in forms 5–7 (Table 3.2).

**Table 3.2: Fiji Islands—Prevocational Courses and Examination Levels**

(proportion of students enrolled in vocational programs as a percentage of total secondary students enrolled, by subject and level)

| Level | Agriculture | Computer Education | Office Technology | Home Economics | | Industrial Arts |
|---|---|---|---|---|---|---|
| **FJC (F4)** | 73 | — | 22 | 86 | | 89 |
| **FSLC (F6)** | 62 | 59 | 14 | C&T | FN | 69 |
| | | | | 15 | 55 | |
| **FSFE (F7)** | 23 | 40 | — | A&D | FT | 25 |
| | | | | 2.5 | 22 | |

A&D = apparel and design, C&T = clothing and textile, F = form, FJC = Fiji Junior Certificate, FN = food and nutrition, FSFE = Fiji Seventh Form Examination, FSLC = Fiji School Leaving Certificate, FT = food and technology, MOE = Ministry of Education, TVET = technical and vocational education and training, — = data unavailable.
Note: Secondary schools offer 16 TVET subjects: agricultural science, computer education, office technology, home economics, clothing and textile, food and nutrition, apparel and design, food and technology, technical drawing, graphic arts, woodwork, food technology, engineering technology, metalwork, technical drawing and design, and introduction to technology.
Source: TVET section of MOE 2004, as presented in the Fiji Islands In-Depth Report, paragraph 3.4.

Most countries report serious difficulties in providing quality prevocational courses in secondary schools. Constraints include lack of trained teachers, facilities, equipment, and funding for consumable supplies. In addition, administrators and parents prefer to concentrate on academic subjects that provide advancement to the next level.

## Vocational Training

Vocational training for, more or less, standard trades is provided in two main types of institutions: technical institutes and vocational training centers. Most countries in the Pacific provide certificate-level training in trades where they have postsecondary institutions. These include the FSM College of Micronesia, College of the Marshall Islands (business-related courses only), Solomon Islands College of Higher Education (SICHE), Vanuatu Institute of Technology (VIT), FIT, NUSIOT, Tonga Institute of Science and Technology (TIST), and Tarawa Technical Institute (TTI). These institutions are covered in the next section.

In addition, most PICs have various types of non-tertiary trade or vocational training (Table 3.3).

**Table 3.3: Trade and Vocational Training in Selected Pacific Countries**

| Country/Type | Length | Number of Institutions | Number of Trainees | Females Enrolled (%) | Number of Graduates |
|---|---|---|---|---|---|
| Cook Islands–Department of National Human Resources Development Training Center | Short courses | 1 | 340 | 23 | |
| FSM–trade training and testing program | | | 300 | | |
| Fiji Islands–Ministry of Education Vocational Centers | 1–2 years | 62 | 2,300 | 46 | 8,500[1] |
| Training and Productivity Authority of Fiji Skill Centers | 1–3 months | 6 | 20,200 | Negligible | |
| PNG–vocational centers | 2 years | 140 | 17,800 | 27 | 3,500 |
| Solomon Islands–vocational and rural training centers | 1–2 years | 28 | 2,000 | 27 | 1,200 |
| Tonga Institute of Science and Technology | 1–3 years | 1 | 296 | 1 | |
| Vanuatu–rural training centers | 2 years | 36 | 2,000 | 20 | |

FSM = Federated States of Micronesia, PNG = Papua New Guinea, % = percent.
Sources: In-depth and background reports.

[1] The Training and Productivity Authority of Fiji (TPAF) awarded 20,200 certificates in 2005 and about 25,000 in 2006. However, some trainees attended more than one training program in a year. The 25,000 certificates were for about 8,500 people attending different training programs (TPAF management).

The trades, training, and testing program (T3) in the FSM trains about 300 people annually in construction, electrical, and mechanical trades—including basic, intermediate, and advanced courses.

Apart from FIT, the Fiji Islands has two systems of trade training—MOE vocational centers and TPAF training. The 62 vocational centers provide 1- to 2-year training courses for 2,300 trainees mainly in five fields (automotive engineering, carpentry and joinery, catering, tailoring, and office technology). Girls make up 46% of the enrollment, but are concentrated in catering, tailoring, and office technology. TPAF trains unemployed school-leavers and workers in enterprises at a ratio of 70% practical to 30% theory. In 2005, it gave 1,510 courses for 20,200 participants, and 1,980 participants in award courses developed with institutions in Australia and New Zealand. Except for catering, virtually all training were for males.

In PNG, about 140 vocational centers enroll 17,800 trainees in mostly 2-year programs that graduate about 3,500 trainees a year. A sizable share of the centers are owned and operated by church agencies. These institutions average only 120 students per center. Overall, 27% of the trainees are female. Church agencies enroll thrice as many female students as government institutions. The vocational centers train in traditional trades—carpentry, auto mechanics, welding/metal fabrication, as well as plumbing and agriculture. Home economics is also provided—cooking, sewing, hospitality, and typing.

**Box 3.2: Fiji Institute of Technology Franchise Program**

Perhaps the most innovative aspect of the program of the Fiji Institute of Technology (FIT) is the "franchising" it offers to secondary schools. Its purpose is to allow students who have finished their secondary education (at forms 4–6) to get qualifications and continue their education at the tertiary level. In effect, it is a bridging program with instruction provided off the FIT campus. It allows students to pursue training for a trade certificate with set quality standards in their locality without having to attend the FIT campus for the first part of the training. There are 48 franchise centers. If a school is interested in establishing a FIT franchise center, FIT sends out inspectors to evaluate the premises, equipment, and qualifications of the instructors. Any shortcomings must be rectified before an agreement is signed. FIT does not provide instructor upgrading, although it may consider short upgrading courses every 2 years for franchise instructors as needed.

Off-site trainees become official students registered at FIT. Trainees pay 150 Fiji dollars (F$) for one stage, which is equivalent to 12 weeks in residence at FIT, but takes 1 year at the franchise center. Schools may add their own tuition charge on top of this—in some cases bringing total tuition charges to F$350–400. This adds to the confusion of parents and students, who then think the franchise cost is excessive. The school only pays FIT for the tuition of the 15 students. If more enroll, the school keeps the tuition. This is intended to give schools an incentive to enroll more students in the franchise programs. Still, the cost to a franchise student is considerably less than that of a residential student at FIT, where tuition and fees total F$350–400 before room and board.

In return for the fees, FIT provides the curriculum and syllabus, and sets and administers the final examination that is uniform throughout the country. Students can now take up to three stages of the five-stage preparation for a trade certificate, but must take stages four and five at FIT. FIT monitors results by center. If overall trainee marks deteriorate, it can remove recognition until the center improves and has done so in at least one case. FIT designates one of its staff "franchise officer" in each specialization and gives them a separate allowance. The franchise officer visits each franchise center at least twice a year and gives a report to the head of school. FIT sets the theoretical examination, sends it to the franchise centers, receives the tests back, and has them marked in Suva. FIT also specifies what has to be assessed in practical subjects, but teachers at the center do the assessment.

The increased demand of secondary schools for this arrangement offers some recognition of the type of courses offered at FIT and their marketability.

Enrollment in FIT Franchise Courses, 2001–2006

| Course | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | Total |
|---|---|---|---|---|---|---|---|
| Automotive | 216 | 334 | 338 | 418 | 594 | 260 | 2,160 |
| Construction | | 8 | 160 | 145 | 215 | 220 | 748 |
| Commerce | | | | 32 | 114 | 88 | 234 |
| Electrical | | | | 13 | 14 | | 27 |
| Hotel and Tourism | | | 165 | 152 | 125 | | 442 |
| Mechanical | 37 | 46 | 98 | 76 | 103 | 44 | 404 |
| Total | 253 | 388 | 596 | 849 | 1,192 | 737 | 4,015 |

Source: FIT Management.

In 2006, the total numbers enrolled dropped because of a near doubling in student fees, from F$80. Many students who take initial stages of the franchise courses and then enroll in FIT to complete the program do not attain the level achieved by students who start at FIT. This is because some franchise courses lack the necessary equipment, e.g., calibration equipment in the automotive course.

According to some observers, the range of courses has changed little over the past 25 years. Dropout is almost 40% during the 1st and 2nd years.

Solomon Islands has 28 working rural and vocational training centers run by the main church agencies in the country. The centers enrolled just over 2,000 trainees in 2006 and graduated 1,200. Only 27% of the trainees were female.

Similarly, Vanuatu has an extensive network of 36 rural training centers (RTCs) that are run by churches and nongovernment organizations (NGOs) without government financial support. In 2006, just over 2,000 trainees were enrolled in courses that lasted about 2 years. Only 20% of trainees were female.

The Cook Islands has established a training center under the Department of National Human Resources Development, which trains about 340 annually in a wide range of short-term courses categorized as in-country upskilling and accredited training. Only 23% of the participants are female.

Three countries have no systems for vocational training in standard trades. Tuvalu has no trade training institution, although the Public Works Training Department gives short courses periodically. Nauru's national vocational training center no longer operates following extensive damage from a fire and subsequent transfer of its few staff. Finally, the RMI in reality has no trade training institution though it has a National Vocational Training Institute. The institute is misnamed and provides only remedial "second-chance" secondary education without vocational training courses. An NGO, WAM, provides some training in carpentry and joinery through traditional boat building.

Vocational training institutions, where they exist, enroll substantial numbers of trainees. However, only a minority of those trainees are female.

The main constraints in vocational training systems include lack of capacity to respond to high demand for training places; lack of qualified instructors; lack of financing; inadequate tools and equipment; poorly maintained facilities; and low-quality training—i.e., trainees usually have to observe in workshops rather than practice.

## Postsecondary Technical Training Institutes

### Overview

All countries, apart from the Cook Islands, Nauru, and Tuvalu, have postsecondary technical training institutes (Table 3.4).

Most postsecondary technical institutes provide a range of qualifications, including various trade certificates and diplomas. Most institutions also give short courses. TTI follows this approach because of the small size of the labor market.

The following are some salient characteristics of postsecondary technical institutes:

• Several technology institutes incorporate different schools or colleges (the Fiji Islands, FSM, Samoa, and Solomon Islands), entailing multiple campuses for some

**Table 3.4: Postsecondary Technical Training Institutes**

| Institute | Length (years) | Number of Institutes | Number of Students (EFTS) | Female Share (%) | EFTS Students per Teacher |
|---|---|---|---|---|---|
| College of Micronesia | 2–3 | 5: 1 national, 4 state | | | |
| Fiji Institute of Technology | 2–4 | 1, with 8 departments and satellite campuses | 7,600[a] | 37 | 30 |
| Kiribati–Tarawa Technical Institute | 1–2 | 1 | 225 | >50 | 9 |
| Palau Community College, Department of Technical Education | 1–2 | 1 | 513 | 31 | 24 |
| PNG–Business and Technical Colleges | 2 | 7 | 2,700 | 30 | 12 |
| College of the Marshall Islands (business and computing only) | 2 | 1 | 67 | 40 | 14 |
| Samoa–National University of Samoa Institute of Technology | 1–2 | 1, with 3 schools | 677 | 33 | |
| Solomon Islands College of Higher Education | 2–3 | 1, with 6 different schools | 1,037 (not EFTS) | 33 | |
| Tonga–Community Development Training College | 1–2 | 1 | 531 | 63 | |
| Vanuatu Institute of Technology | 1–2 | 1 | 500 | 42 | 9.7 |

a The actual number of students by head count exceeds 13,000.
EFTS = equivalent full-time student, PNG = Papua New Guinea, % = percent, > = more than.
Sources: In-depth and background reports.

institutes in the Fiji Islands and Solomon Islands. The FSM has five campuses for its College of Micronesia.

• The Fiji Institute of Technology (FIT) is clearly the largest and the leader in the Pacific, and even offers degree-level training.

• The level of enrollment in PNG—2,700 trainees—seems low compared to other countries, especially the 7,600 in the Fiji Islands, a country with one fifth of PNG's population.

• The level of outputs is relatively low in relation to enrollments at the community colleges in the RMI, FSM, and Palau.

• A relatively low proportion of students are female—on the average 30% in PNG, 37% at FIT, and 42% at VIT—except in commerce and tourism programs.

• Several institutions teach according to competency-based methods, including technical colleges in PNG, NUSIOT in Samoa, and VIT in Vanuatu.

• Several technical institutes have industry members on their boards, including a majority at FIT. FIT and NUSIOT in Samoa use industrial advisory committees to ensure relevant content of courses. VIT in Vanuatu has attempted the same, but its industrial advisory committees are dormant at present. TTI in Kiribati has no industry representation.

• The institutions use different means for quality assurance. Both the College of the Marshall Islands and the College of Micronesia are members of the Western Association of Schools and Colleges of the US. Others use internal quality assurance—including FIT and NUSIOT, which have both adopted processes developed in New Zealand.

• Two technical institutions—FIT and NUSIOT—are autonomous. Most others report to MOE (PNG, Community Development Training College in Tonga, TTI, and VIT).

• The average number of full-time equivalent students to full-time equivalent teachers varies greatly—9:1 at TTI, 9.7:1 at VIT, 12:1 at PNG technical colleges, 14:1 in the RMI (business and computing only), 20:1 at TIST, and 30:1 at FIT. The latter two call into question the amount of practical training that can be done.

• Several institutions incorporate apprenticeship training (the FSM and PNG).

Only three countries have done tracer studies on graduates—Palau, Solomon Islands, and Vanuatu. These studies have shown reasonably high employment rates for graduates, and graduates tend to stay in capital cities. Only 4% of graduates in Vanuatu came from urban areas, but 87% stayed in urban areas after graduation.

## Constraints

Some main issues are:

• For all institutions, the principal constraint is lack of funds. In Solomon Islands, SICHE gets 80% of its revenue from government and donor sources, and financial limitations have led to staff redundancies. Lack of funding makes it difficult or impossible to keep equipment up-to-date (PNG, VIT, FIT, TTI, and TIST). Still, FIT has been able to mobilize more than half its income from student fees and services. FIT substantially reduced its recurrent cost per student by increasing by 50% the average number of students per teacher (from 20–30).

• Staffing-related issues include inadequate teacher qualifications (the RMI, Tonga, and VIT); high staff turnover, reflecting more attractive wages in the private sector (PNG and Tonga); and the need to update the faculty (FIT).

• Other constraints are (i) low educational qualifications and competencies among entering students—this limits what could be covered (the RMI and VIT); (ii) limited cooperation of employers in advising the institutions and providing practical internships

(Samoa and Tonga); and (iii) excessive administrative centralization (PNG) and narrow internet bandwidth (RMI).

## Apprenticeship and Enterprise-Based Training

### Apprenticeship Training

Training apprentices is an important part of skills formation in many Pacific countries. Half the countries have organized apprenticeship training programs. One, the Cook Islands, arranges for apprenticeship training in New Zealand. Another, Tonga, has training similar to apprenticeships under TIST. Table 3.5 shows some dimensions.

The typical pattern is for apprenticeship training in about seven trades, lasting 4 years, a part of which involves formal training within a training institution. Apprentices are tested for skills and theoretical understanding in the final year and are awarded certificates upon completion.

Apprenticeship training is well developed in PNG and the Fiji Islands. In PNG, NATTB manages apprenticeship training, which normally lasts 3–4 years in eight fields. Apprentices also undergo 8 weeks in technical colleges, paid for by the employer. In total, PNG enrolls 900 apprentices with about 200 apprentices completing their training each year.

In the Fiji Islands, about 580 apprentices are enrolled annually in 4–5-year training programs in 23 trades. About 120 complete apprenticeships annually. Cumulatively, over 5,000 apprentices have completed their training since the program was introduced in 1963. Apprentices are an important source of TVET trainers for trades taught by TPAF and MOE. TPAF administers the apprenticeship program. The numbers of graduates each year in Samoa are also sizable in relation to employment and the size of the training system.

In countries without formal apprenticeship schemes, employers also provide apprenticeships. More than a quarter of all employers surveyed as part of this review had

**Table 3.5: Pacific Apprenticeship Systems**

| Country | No. of trades | Length (years) | No. of employers | No. of enrolled | Annual output |
|---|---|---|---|---|---|
| Cook Islands | 4[a] | | | 44[b] | |
| Fiji Islands | 23 | 4–5 | 66 | 650 | 120 |
| Kiribati | 3 | 2+ | | 40 | |
| FSM | 5 | 4 | | | 35[c] |
| PNG | 7 | 4 | | 900 | 200+ |
| Samoa | 7 | 4 | 89 | 233 | 50 |
| Solomon Islands | 4 | | | | |

a Automotive, electrical, carpentry, and plumbing; b In New Zealand; c Cumulative.
FSM = Federated States of Micronesia, PNG = Papua New Guinea
Sources: In-depth and background reports.

apprentices working in their firms. This included a third of surveyed firms in Solomon Islands and 40% in Tonga. The RMI has no organized program of apprenticeship training, but one fifth of employers—particularly larger firms—report providing apprenticeship training. The RMI firms that hire apprentices can be exempt from the minimum wage and a number of firms do so. However, this practice may be exploitative. Little monitoring of the minimum wage and apprenticeship practices exists.

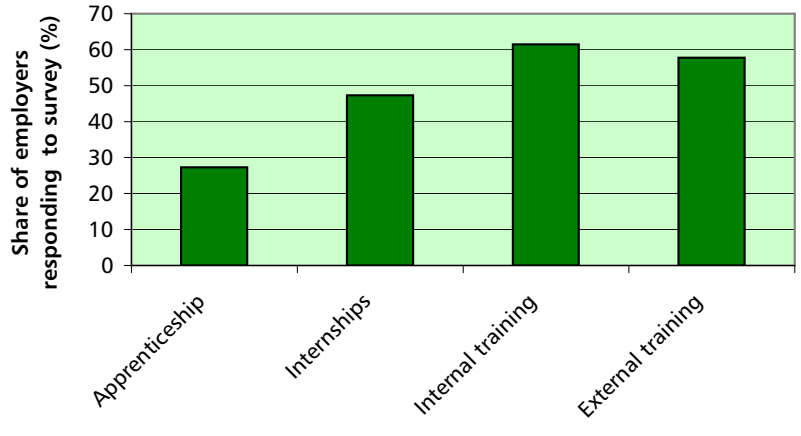
Constraints on apprenticeship programs include the following:

- insufficient support from industry to employ apprentices (Samoa and Tonga);
- high costs to employers for support and formal training (PNG);
- from the viewpoint of apprentices, low wages are a deterrent to continuing in such programs;
- the need for employers to view apprenticeship as an investment, not a cost (Samoa);
- insufficient qualified workplace trainers (Samoa and Tonga);
- the quality of on-the-job training (PNG), particularly in smaller companies;
- the quality of instruction at technical institutions and lack of up-to-date equipment (PNG and Samoa); and
- the lack of systematic training schemes (Tonga).

## Enterprise-Based Training

The employer survey carried out as part of this TVET review found that substantial training has occurred within enterprises (Voigt-Graf 2007a).

**Figure 3.1: Employer Training Provision (by type), 2006**



The highest training priority of employers across the region was in accounting and financial management (15% of employers), followed by customer service (13%), and human resource management (12%).

The survey of employees that this TVET review carried out provided a somewhat different picture. It found that 62% of the workers had received training in their current workplace. About 35% of these had received formal internal training, 30% informal on-the-job training, 8% formal external training, 3% had participated in apprenticeship, and 5% in different types of training. Formal internal training was highest in the Fiji Islands and Tonga and lowest in Kiribati, RMI, FSM, Nauru, and Tuvalu. The largest number of employees had received training in frontline management (26%), accounting and financial management (12%), and customer service (10%). One most striking feature from the employee survey was that many crafts and tradespeople did not receive any post-school qualifications, including 67% of carpenters, 36% of electricians, 89% of chefs and cooks, and 68% of waiters Voigt-Graf (2007a).

## Maritime and Fisheries Training

The Pacific region trains about 1,000 seafarers a year in 13 maritime training institutions (MTIs) across 11 of the 13 countries. These MTIs contribute to skills development at national and international levels in a range of occupations: from qualified fishing deckhands and coastal shipping crew to international deck and engine ratings, merchant navy officers, to class 1 masters qualified to captain large seagoing vessels.

Wages earned by maritime workers contribute significantly to domestic economies with some countries earning more than 25% of gross national product (GNP) in the form of remittances from seafarers. The small island states of Kiribati and Tuvalu particularly depend on remittances, with Kiribati earning 25% and Tuvalu 30% of GNP from seafarers.

The International Maritime Organization (IMO), a United Nations body that sets international conventions, treaties, and regulations to govern port authorities, national maritime administrations, and maritime training institutions, regulates the maritime sector globally. IMO requires that a recognized training provider—with legislative and quality management systems to ensure that seagoing personnel are competent in a number of prescribed functions—certify seafarers on international vessels. This requirement is governed by STCW-95 (the International Convention on Standards of Training, Certification, and Watchkeeping for Seafarers 1978 as amended 1995).

Every nation must implement and comply with IMO processes and obtain recognition by IMO such that full and complete effect has been given to STCW-95; this is known as the "white-list status." Loss of this status precludes recognition for international standards of training, and prevents seafarers trained in the country from obtaining

employment on regional or international ships. Ships that do not meet IMO standards cannot load or unload cargo in IMO-compliant ports.

Growing international concern about terrorism and port security has seen the introduction of many IMO requirements, e.g., the International Ship and Port Facility Security Code. The speed with which new rules are proposed and expected to be implemented is a challenge for small island countries with minimal staff and resources and increasing compliance costs. Consequently, the Regional Maritime Programme (RMP) has been established, as a division of the Secretariat of the Pacific Community (SPC), based in the Fiji Islands. RMP helps ensure that poorly resourced PICs can comply with complex international conventions.

RMP provides training for maritime administrations, training institutions, ports, shipowners, and seafarers throughout the region to ensure that their operations conform to international treaties and conventions and accepted best practice. It has developed standardized training curricula that comply with the STCW-95 convention for training ratings and able seafarers within Pacific institutions. RMP oversees the quality assurance and audit program for Pacific MTIs, supports individual countries through the development of model maritime law and regulations, offers a maritime legal advisory service, and coordinates a data and information management system that tracks individual seafarer and vessel profiles across the region.

Pacific MTIs are a good practice example of how nonnegotiable international conventions can be translated into regional and national compliance standards and quality assurance frameworks that ensure countries and their seafarers both comply with international conventions and safeguard seafarers' ability to contribute to economic growth.

Maritime institutions are established in 11 of the 13 countries (Nauru and Palau are the exceptions). Both Kiribati and PNG have two maritime institutions; one trains fishing people exclusively and the other trains seafarers for domestic and international work. MTIs in most countries train for their own domestic coastal merchant, fishing, and tourism vessels. Fiji Islands, Kiribati, Samoa, Tuvalu, and—to a lesser extent—PNG train specifically for international shipping companies.

Several MTIs provide short courses for domestic fishing people. Vanuatu's Maritime College has developed a 2-week mobile training program for rural fishing people to develop or improve their fishing and seafood-handling skills, learn how to operate small boats safely, operate and maintain outboard motors correctly, and maintain and repair small boats.

While remittances have demonstrated positive economic benefits, some social impacts associated with seafaring lifestyles are less desirable. Sexually transmitted diseases, including human immunodeficiency virus (HIV) and acquired immunodeficiency

syndrome (AIDS), substance abuse, and domestic violence have been documented as consequences of long separations from families. Disruption of traditional gender roles—as women take on solo management of households when spouses are at sea—and adjustment difficulties in resuming relationships with returning seafarers, can add to negative social impacts.

RMP estimates that there is the potential for 1,500 new international seafaring jobs for Pacific Islanders. There is also potential for greater levels of employment in the cruise ship market. Ni-Vanuatu are currently employed on P&O Cruise Ships and I-Kiribati are employed onboard Norwegian Cruise Line ships.

However, increasing levels of specialization in the maritime industry will require additional investment in MTIs. RMP is concerned that some member countries do not fully acknowledge the importance of the maritime sector to their national economies. For some PICs, maintaining IMO white-list status is not optional; it is imperative.

## Private Training Providers

"Private" or "nongovernment training" is made up of two main parts: not-for-profit institutions operated by NGOs and religious organizations, and for-profit institutions. Several countries in the region have no private (Kiribati) or private/nongovernment (the Cook Islands and Nauru) training institutions. The RMI has no private training market whatsoever. Tuvalu has one private training institution for commercial studies.

**NGO-Sponsored (not-for-profit) Training**. Religious organizations partner with several governments to provide vocational and technical training at various levels, in such countries as the Fiji Islands, PNG, Samoa, and Solomon Islands. Tonga has seven technical colleges and institutes operated by church organizations. The quality of the religious-operated vocational training generally is high owing to dedication, experience, and expertise.

The salient characteristics of NGO-sponsored training are as follows:

(i) Nongovernment institutions operate all 36 RTCs in Vanuatu (enrolling 2,000 trainees), many RTCs in the Solomon Islands, and 56 vocational centers in PNG (40%) (enrolling 6,500 trainees).

(ii) Church organizations and NGOs often target school dropouts, out-of-school youth, and disadvantaged populations.

(iii) Training programs tend to be along the lines of traditional trades—carpentry, building trades, automotive trades, and home economics.

(iv) NGO training institutions often sell products. For example, Montfort Technical Institute in the Fiji Islands sells high-quality furniture made by its advanced carpentry and joinery students, but sales rarely meet more than a quarter of operating expenses.

(v) Religious and NGO organizations are sometimes subsidized by government, such as in PNG (teacher salaries), Fiji Islands (special grants), and Samoa (per student funding, delivered in a lump sum). In other countries, such as Tonga, nongovernment-training providers receive no subsidies from government.

The main constraints reported by not-for-profit training institutions are:

(i) Training providers depend on maintaining a minimum student enrollment able to pay tuition fees. Yet declining numbers of paying trainees often force institutions to cut courses, reduce teaching staff, hire less well-qualified trainers, provide fewer instructional materials, and defer capital maintenance and renewal.

(ii) Church and NGO bodies have difficulty in recruiting and retaining qualified staff, as many of their training institutions cannot pay salaries equivalent to those in the public sector.

(iii) Other issues include lack of national standards to set the quality of courses and limited strategic plans to provide direction (Samoa).

**For-Profit Training**. The Fiji Islands and PNG, in particular, have substantial numbers of for-profit training institutions. The Fiji Islands has registered about 50 such institutions and PNG over 100. Data are weak on enrollments, but the institutions tend to cluster in low-cost fields, such as computers, business and accounting, hairdressing, and hospitality/catering.

The registration and accreditation processes vary by country, as seen in the following:

(i) Samoa has had no accreditation processes, but the new SQA is expected to accredit all institutions.

(ii) The FSM expects any institutions that deliver certification to be accredited by an outside accrediting agency. Any institution conferring only informal (i.e., institution-specific) certificates do not need external accreditation, only registration as a business.

(iii) MOE in the Fiji Islands requires for-profit training institutions to undergo a two-step process: first, application for establishment; and if a processing committee approves, second, application for recognition with verification of input standards. Training can start once recognition is granted. Annual inspections are supposed to follow to ensure the institution is being run according to standards and plan, but are rarely made. MOE does not regulate fees. On the contrary, recognition means a parent may access their Fiji National Provident Fund savings to pay for school fees.

(iv) TPAF in the Fiji Islands accredits training providers for programs that are eligible for grant-claimable status under the levy-grants scheme.

(v) NTC in PNG assesses and accredits three aspects of private (for-profit) training—institutions, courses, and even trainers. Once a training provider applies to NTC for registration, a quality assurance unit screens the application, two assessors conduct a site inspection, and a report is prepared for the screening and assessment committee, which meets six times a year. If approved, the application goes to the NTC board for final approval. Evaluation criteria include evidence of business registration, mission statements, and objectives; adequacy of funding; training plans and relevance of courses; standards of facilities and equipment; staff qualifications; trainee entrance requirements; and selection criteria. Approval is granted for only 1 year at which time the provider has to apply for continued registration. So far, 107 institutions have been registered. Institutions have been de-registered for failure to apply for continued registration. NTC does not regulate the fees charged.

In PNG, a wide range of quality was observed in for-profit training institutions, calling into question the effectiveness of the screening process by NTC. NTC reports inadequate staff capacity to carry out the assessments (three assessors have to cover 109 institutions annually, plus courses and trainers); lack of prosecutorial powers for those who fail to register; need to strengthen the expertise of assessors, plus training in monitoring and developing policy; and additional funding, to permit on-site visits to the institutions being registered. At present, once a training center is registered, few follow-up visits are made.

For-profit training institutions rely exclusively on tuition for capital and operating expenses. Private and nongovernment training providers have the option of joining national support organizations for training, e.g., Samoa Association of TVET Institutions in Samoa or Solomon Island Association of Rural Training Centres in Solomon Islands.

**Box 3.3: Pohnpei Agriculture and Trades School**

One key nongovernment training institution in the Federated States of Micronesia (FSM), the Pohnpei Agriculture and Trades School (PATS), a 4-year coeducational vocational high school, closed in 2005 after decades of operation. It served students from Kiribati, Nauru, Palau, and Republic of the Marshall Islands, as well as the FSM. It provided training in construction, mechanics, and agriculture. The closure of PATS was directly related to FSM students' lack of interest and declining enrollment in the occupational and trade fields.

Factors responsible for the declining enrollment were lack of employment in the local job market after graduation, low wages offered for available jobs in the trades areas, unfair hiring and employment practices in the private sector job market, and availability of cheap labor from overseas. With these factors and the absence of a minimum wage policy, pursuing vocational education and trades training offered little immediate or medium-term economic advantage. Declining enrollment led to financial problems over the years.

Source: FSM background report.

## Trade Testing

Trade tests focus on outcomes and competencies, rather than inputs. Trade testing serves multiple objectives:

- raising the quality of skills attainment by providing goals of minimum standards and a convenient measure for training providers and individuals;
- providing an incentive through certification for individuals to increase their skills;
- permitting upward mobility by allowing those who have attained skills through work experience to have their skill level recognized; and
- providing a mechanism to integrate training providers, giving a basis for comparing the performance of disparate training providers.

Two major trade-testing systems function in the Pacific: the Fiji Islands and PNG. The Fiji National Trade Testing Scheme of TPAF provides an avenue for workers without formal qualifications to acquire recognition of their skills and knowledge acquired on the job in 24 different trades. Some 1,600–1,900 candidates are tested annually. Passing rates are 66–75% for class III (junior tradesperson), 50–66% for class II (qualified tradesperson), and 40–65% for class I (supervisor). Fees charged cover about 60% of the cost of the testing; the training levy finances the balance. Trade qualifications gained through trade testing reportedly reach a close second to apprenticeship in terms of market value.

The PNG trade testing under NATTB also provides certification for achievement of occupational performance standards regardless of how the individual has achieved the standards. The system was developed with the help of two projects funded by AusAID and it covers seven fields. In 2006, 30 tests were planned for level one, 19 tests for level two, and 17 tests for level three. Cost recovery pays for only about one quarter of the total cost of testing per person. The trade standards implicit in the testing system have become an important unifying theme for all parts of the TVET system. All providers from nonformal to technical colleges use the standards.

The Department of Labor in Kiribati operates a national skills testing system in five occupational areas, covering about 100 people a year. Samoa has a system of trade testing panels to assess the achievements of apprentices upon completion of their training. The Labor Division in Solomon Islands operates a National Trade Training and Certification Unit. It provides national recognition trade testing and certification to grade tradespeople in accordance with degree of proficiency and competency, and to encourage motivated tradespeople to develop skills and undergo trade testing to upgrade skills. Vanuatu has closed its Trade Testing and Certification Unit partly because of problems in updating equipment. Presumably, VNTC will take over the function of quality assurance and recognition of prior learning. Finally, the Palau Community College is an approved testing center for the National Occupational Competency Testing Institute (US). The institute examinations are offered at two levels—job-ready and experienced workers.

## Rural and Informal Sector Training

Training for the rural and informal sector in the Pacific forms part of the wider nonformal education subsector and continues to be provided mainly by nongovernment, faith-based, and private organizations and institutions.

Governments support informal sector training either by subsidizing NGO-run programs, as in the Cook Islands, Nauru, Solomon Islands, and Tuvalu, or by organizing short courses through conventional TVET institutions, e.g., the VIT outreach program in Vanuatu, T3 short courses in the FSM, and the Advanced Vocational Training Program in the Fiji Islands. In addition to government funds, direct contributions by NGOs, community fund-raising activities, and student fees are the principal sources of recurrent finance for informal sector training.

Rural women and unemployed youth are the main target groups in all PICs. Nevertheless, women tend to be underrepresented in or absent from most technical skills training programs and their participation is confined largely to traditional gender-related subjects.

Surveys of rural training needs in PNG, Solomon Islands, and Vanuatu point to three main categories of skill needs at the village level: technical skills for community development projects and artisan-based occupations in the local economy, small business and management-related skills for self-employment in agricultural-based microenterprises, and basic livelihood skills for improving the quality of life in remote areas where economic opportunities are scarce.

Informal sector training in the atoll economies (Kiribati, RMI, and Tuvalu) tends to be limited and concentrated in the capital or the main island. No atoll state has developed a cost-effective outreach to provide training to remote islands.

Where RTCs exist, e.g., PNG, Solomon Islands, and Vanuatu, the curricula are geared toward conventional occupations in the formal economy rather than to income-generating opportunities in the rural informal sector. They tend to function mainly as alternative modes of conventional education in rural areas for those pushed out of the formal school system.

Access to credit and market linkages are two important factors that condition the success of training for self-employment. In the RMI, the Ministry of Resources and Development estimates that only 10% of those who participate in its self-employment training programs actually start their own businesses, and in the Fiji Islands, only 21% of graduates from the 2004 Ministry of Youth and Sports training program began self-employment.

Small-scale credit or microfinance programs are available in most countries in the region, e.g., PNG (Ginigoada Business Development Foundation), Samoa (Women in Business), and Vanuatu (VanWoods), but their coverage is limited and confined largely to nonrural target groups.

Technical cooperation projects have not only played an important role in establishing training infrastructure for the informal sector but also in providing resources for developing innovative methodologies and approaches in countries such as the Fiji Islands, RMI, PNG, and Vanuatu. However, to be successful, these initiatives require a strong institutional counterpart that can develop and provide the training support services implied in these projects.

Providing rural and informal sector training in the Pacific remains highly fragmented and largely uncoordinated at the national level. Few countries—PNG and Fiji Islands are the exceptions—have sought to develop a policy framework to guide decision making vis à vis priorities, implementing strategies, and allocating resources.

Constraints include low funding priority accorded to rural and informal sector training by governments; weak links to local labor and product markets and the agriculture sector; lack of follow-up monitoring and evaluation; unequal access to training and gender discrimination; absence of cost-effective delivery systems for remote populations; limited access to credit for self-employment; limited NGO training capacity; and outdated and inappropriate training hardware and software.

## TVET Costs, Financing, and Expenditures

### TVET Financing

PICs fit into two categories in education expenditure: those that rely mostly on their own funds and those that receive significant external funding for education and channel government funds to other activities. Countries also vary considerably in terms of the level of private and industry support to TVET through training levies, student fees, college-based enterprises, and industry support through apprenticeships. Generally, government education financing (Table 3.6) constitutes a substantial share of GDP and the budget, suggesting limits to sustaining support to education in the context of a growing population. Difficulties are particularly likely to arise in the absence of significant funding for small island states. TVET expenditure is low and likely to be affected by increasing demands for primary and secondary education by rising populations. Ministries other than the Ministry of Education fund training activities, such as marine/fisheries colleges and informal sector training, thereby generating additional government financing of the TVET sector.

Table 3.6 provides data on the financing of education and the TVET sector in PICs. Countries that do not receive external funds demonstrate strong government financial support for education, as evidenced by the ratio of education expenditure to total government spending, which exceeds 15% except for Tonga. Countries that rely heavily on external rather than their own funds for education include the RMI and the FSM (which receive US grants). Direct government outlays on education in the FSM

**Table 3.6: Financing of TVET in the Pacific**

| Countries | TVET as Share of GDP (%) | TVET as Share of MOE Expenditure (%) | MOE Expenditure as Share of Budget (%) | MOE Expenditure as Share of GDP (%) |
|---|---|---|---|---|
| Cook Islands | 0.2 | 6 | — | 3 |
| Fiji Islands | 0.4 [a] | 4 | 19 | 10 |
| Kiribati | 0.6 [b] | 3 | 25 | 21 |
| RMI | 1.8 [c] | 24 [d] | 12 [e] | 24 |
| FSM | 1.4 | 7 | — | 19 |
| Palau | 3.3 [f] | 54 [g] | 11 | 7 |
| PNG | 0.5 [h] | 13 | 16 | 8 |
| Solomon Islands[i] | 3.5 | 40 | 25 | 9 |
| Tonga | 0.3 | 9 | 13 | 3 |
| Tuvalu | — | — | 23 | — |
| Vanuatu | 0.6 | 3 [j] | 26 | 12 |

a If the training and productivity authority of Fiji is included, this increases to 0.68.
b Data for Tarawa Technical Institute only. If the Fisheries Training Center and the Marine Training Center are included, the figure rises to 2.0.
c Includes the National Training Council, National Vocational Training Institute, and the business studies/computing part of College of the Marshall Islands; however, if only the National Training Council is included, then the figure is 0.5%.
d Includes the National Training Council, National Vocational Training Institute, and the business studies/computing part of College of the Marshall Islands; however, if only the National Training Council is included, then the figure is 2%.
e Pertains to government funds only—excludes external funds.
f Palau Community College only, which also offers bachelor degree courses.
g Ministry of Education expenditure here also includes external funding through the Compact.
h Vocational centers and business and technical colleges only. Excludes the National Training Council.
i TVET reference is for all tertiary sectors so the actual TVET expenditure is much smaller.
j Vanuatu Institute of Technology only; 6% for all TVET-related activities.
Note: Data are not available for all countries in the study.
FSM = Federated States of Micronesia, PNG = Papua New Guinea, RMI = Republic of the Marshall Islands, TVET = technical and vocational education and training, — = data unavailable, % = percent.
Sources: In-depth and background reports; and World Bank, 2007.

amount to about 2% of total expenditure. The RMI government contributes about 14% to total educational expenditure.

Ratios of education spending to GDP are generally high with the highest rates occurring for Kiribati, RMI, and FSM. This arises from a strong commitment to education in the context of limited economies. US support makes this possible in the RMI and the FSM, but education expenditures represent a substantial burden for Kiribati. Declining resources per capita in general education adversely affect the overall standard of education and pose greater difficulties for post-school education. Already, limitations with school education in Kiribati, RMI, and Tuvalu are being identified. These are likely to impact severely on support for the formal TVET sector as governments weigh the costs and benefits of the formal TVET sector in relation to general secondary education.

Major differences in classification of TVET mean that data on expenditure are not always comparable. A comparison is easiest where there are similar TVET institutions as with the Cook Islands, Fiji Islands, Kiribati, PNG, Samoa, Tonga, and Vanuatu. In these countries, TVET expenditure as a share of education spending is lowest in Kiribati and highest in Tonga and PNG. Kiribati, with a small national population and limited economic activity, has few jobs in the formal wage sector. Consequently, few benefits are available in establishing a substantial formal TVET infrastructure aimed at producing skilled labor, which has little opportunity for employment. PNG, on the other hand, has a significant wage employment sector with a substantial range of jobs, and hence, can support a major TVET sector.

The data indicate a significant share of education funding provided to TVET in Solomon Islands. However, this supports a range of activities in higher education including SICHE, which provides a broad range of qualifications including those that are higher education, such as education and nursing. External funding allows the RMI—if the College of the Marshall Islands (CMI) is included—and the FSM to contricbute significantly to TVET, although no government institutions in the RMI exist to provide industrial and construction skills.

In terms of GDP, countries with the highest ratio of TVET funding to GDP are those that have the most limited economies—Kiribati, RMI, and FSM. Additional financing of TVET (not captured in the data above) comes from other ministries. A range of ministries provides training for the informal and agricultural sector. Of particular importance are the marine and fishing training colleges that are financed by ministries other than the education ministry and, hence, are not captured in the ratio of TVET expenditure to MOE spending. Outlays can be significant, as in PNG and Kiribati. Overall expenditure for the Marine Training Center in Kiribati, for example, exceeds that of the general TVET institution, Tarawa Technical Institute.

Training levies and student fees suggest a sustainable TVET system. These sources of income reduce dependency on government funds. In this sense, the Fiji Islands and PNG possess sustainable TVET systems. Fiji Islands uses the levy[1] directly for training in TPAF, fostering an industry training culture. PNG has not used the levy directly for training purposes. Levies placed on shipping companies in PNG also help support the PNG Maritime College. Kiribati too gains funds from shipping companies to help operate the maritime and fishing institutes. Similarly, fishing revenue in the RMI is used to fund the Fisheries and Nautical Training Center.

1 Employers pay a 1% training levy on their payroll. Employers can subsequently claim these funds back based on the amount of training carried out.

As seen in Table 3.7, student fees constitute a major source of finance for the Fiji Islands, PNG, Solomon Islands, Tonga, and Vanuatu. TPAF in the Fiji Islands primarily funds its formal courses from student fees, but funds from the levy on training help support at least some infrastructure. Of less importance for financing generally are college-based enterprises. Nonetheless, as demonstrated by the St. Joseph's Catholic Technical School (Lae, PNG)—which derives 9% of its revenue from production—the income enables substantial consumables to be used in instruction.

A further factor in financing TVET training is the degree to which the private sector is involved in formal TVET training. It is most developed in PNG, with TVET training carried out in a wide range of fields including technical trade training. Notable examples are Ok Tedi Mining and Hastings Deering (PNG) Ltd. In the Fiji Islands and Vanuatu, private sector investment is most likely in occupations related to business and personal services. Such investment in TVET mobilizes substantial additional resources, thus adding further strength to TVET financing. Evidence of support to TVET is also seen in the apprenticeship systems in Kiribati, Fiji Islands, and PNG. Apprenticeship results in significant on-the-job-training in public and private sector enterprises to achieve skilled

**Table 3.7: Major Sources of Revenue for Pacific Island TVET Institutions**

| Country | Government | External | Student Fees | Training Levy |
|---|---|---|---|---|
| Cook Islands | x | x | | |
| Fiji Islands | x | | x | x |
| Kiribati [a] | x | | | |
| RMI | x | x | | x [b] |
| FSM | x | x | | |
| Nauru | x | | | |
| Palau | x | x | x | |
| PNG | x | | x | x |
| Samoa | x | | | |
| Solomon Islands | x | x | x | |
| Tonga | x | | x | |
| Tuvalu | x | | | |
| Vanuatu | x | | x | |

a Although there are no training levies, levies are collected from foreign fishing fleets. Revenue from this contributes to the funding of the Marine Training Center and the Fisheries Training Center.
b Levy on wages of foreign workers in the country.
FSM = Federated States of Micronesia, PNG = Papua New Guinea, RMI = Republic of the Marshall Islands, TVET = technical and vocational education and training.
Source: In-depth and Country Studies (2006–2007).

labor. Overall involvement in apprenticeship represents significant public and private sector investment in TVET beyond MOE funds.

## Financing of Nonformal Sector Training

Most countries fund nonformal training through ministries dealing with education and youth affairs. A range of other ministries, including those for natural resources, women, the interior, commerce and industry, and labor also fund training dealing with their specific focus, but this varies from country to country. The activities are often undertaken in association with funding from development partners. In many countries, religious organizations and NGOs fund nonformal training. The large number of agencies involved indicates that PICs generally lack a nonformal-sector training plan and an integrated approach to nonformal training.

## Costs of Training

Data on costs show that Pacific TVET institutions spend most of their funds on salaries (Table 3.8). This can mean, especially in Tonga, that few funds remain for materials and consumables essential for practical exercises. Not all institutions have precise data about consumables. However, a useful comparison is the various TVET institutions in the Fiji Islands. TPAF focuses strongly on practical exercises and has a ratio of salaries to consumables of 4:1. FIT, on the other hand, has a ratio of about 23:1, reflecting much less opportunity for students to undertake practical exercises. The MOE vocational centers fare worse with a ratio of about 35:1, indicating a real paucity of materials for practical exercises. Apart from TPAF, the only institutions that appear to be adequately resourced with materials for practical exercises are the St. Joseph's Catholic Technical School and the Maritime Training School in PNG, and Waan Aelon in Majel (WAM) in the RMI. St. Joseph's achieves its level of consumables by operating a small-scale factory; WAM does it through grant funds as well as income generation, which includes sailing canoe charters (mainly traditional) and sales of trainee-made museum-quality outrigger models. Institution budgets also reveal little attention to maintenance other than repair of critical infrastructure.

Costs per equivalent full-time student (EFTS) vary substantially from country to country as seen in Table 3.9. The most costly institution is the PNG Maritime College, which is classified as a higher-education institution. The high costs are caused by staff wages, the cost of consumables, and the overall upkeep of highly sophisticated infrastructure. Similarly, the Kiribati Marine Training Center also displayed high costs though it trains a lower "rating," level. The most costly countries are the Compact member states of the

**Table 3.8: Expenditure Items of Key TVET Institutions (%)**

| Country and Institution | Staff | Consumables | Goods/Services | Others |
|---|---|---|---|---|
| **Technical institutes** | | | | |
| Fiji Islands–Fiji Institute of Technology | 68 | 3 | 8 | 21 |
| Kiribati–Tarawa Technical Institute | 61 | | 27 | 12 |
| RMI–College of the Marshall Islands | 67 | 3 | 10 | 20 |
| FSM–Community College of FSM | 91 | | 9 | |
| Palau–Community College | 58 | 16 | 6 | 19 |
| PNG–Lae Technical College | 49 | | 31 | 20 |
| Samoa–National University of Samoa, Institute of Technology | 68 | 5 | 27 | |
| Vanuatu–Vanuatu Institute of Technology | 60 | 12 | 28 | |
| **Trade training institutions** | | | | |
| Fiji Islands–Training and Productivity Authority of Fiji | 56 | 14 | 9 | 21 |
| Fiji Islands–MOE vocational centers | 69 | 2 | <1 | 29 |
| RMI–Waan Aelon in Majel | 68 | 7 | 13 | 12 |
| PNG–St. Joseph's Catholic Technical School | 44 | 12 | 26 | 18 |
| Tonga–Tonga Institute of Science and Technology | 91 | | 6 | 3 |
| Tonga–Short-Term Training Center | 58 | | 30[a] | 12 |
| **Marine colleges** | | | | |
| Kiribati–Marine Training Center | 68 | | 26 | 6 |
| PNG–Maritime Training Center | 57 | | 24 | 19 |

a Includes 3% for maintenance.
FSM = Federated States of Micronesia, MOE = Ministry of Education, PNG = Papua New Guinea, RMI = Republic of the Marshall Islands, TVET = technical and vocational education and training, % = percent, < = less than.
Sources: In-depth and background reports.

**Table 3.9: Annual Cost per Equivalent Full-Time Student**

| Country and Institution | Year | EFTS amount | Currency | EFTS in $[a] |
|---|---|---|---|---|
| **Technical Institutes** | | | | |
| Fiji Islands – Fiji Institute of Technology | 2005 | 2,412 | F$ | 1,471 |
| Kiribati – Tarawa Technical Institute | 2006 | 2,300 2,900 | A$ | 1,861 2,346 |
| RMI – College of the Marshall Islands | 2007 | 11,000 | $ | 11,000 |
| FSM – Community College of FSM | 2005 | 11,761 | $ | 11,761 |
| Palau – Community College[b] | 2007 | 9,532 | $ | 9,532 |
| PNG – Lae Technical College | 2006 | 5,300 | K | 1,798 |
| Samoa – National University of Samoa, Institute of Technology | 2005 | 5,002 | ST | 1,851 |
| Solomon Islands – Tertiary Education[c] | 2005 | 30,036 | SI$ | 4,214 |
| Tonga – Tupou Tertiary Institute | 2005/06 | 1,955 | T$ | 964 |
| Vanuatu – Vanuatu Institute of Technology | 2005 | 199,470 | Vt | 1,933 |
| **Trade training centers** | | | | |
| Fiji Islands – Training and Productivity Authority of Fiji | 2006 | 3,075 | F$ | 1,875 |
| Fiji Islands – School Annex | 2005 | 1,540 | F$ | 939 |
| RMI – Waan Aelon in Majel | 2006 | 13,000 | $ | 13,000 |
| PNG – St. Joseph's Catholic Technical School | 2006 | 1,500 | K | 509 |
| Tonga – Tonga Institute of Science and Technology | 2005/06 | 713 | T$ | 352 |
| **Marine colleges** | | | | |
| Kiribati – Marine Training Center | 2006 | 6,600 | A$ | 5,350 |
| PNG – Maritime Training Center | 2006 | 52,000 | K | 17,642 |

a Conversion on 1 April 2007.
b Based on 513 total enrollments. The real figure will be higher if these are not all full time.
c Based on per capita government expenditure and per capita personal cost.
A$ = Australian dollar, EFTS = equivalent full-time student, FSM = Federated States of Micronesia, F$ = Fiji dollar, K = kina (PNG), MOE = Ministry of Education, PNG = Papua New Guinea, RMI = Republic of the Marshall Islands, SI$ = Solomon Islands dollar, ST = tala (Samoa), TVET = technical and vocational education and training, T$ = pa'anga (Tonga), Vt = vatu (Vanuatu).
Sources: In-depth and background reports; and World Bank, 2007.

RMI and the FSM. Low numbers of students per staff member in Waan Aelon in Majel and CMI largely explain the high relative costs. The data otherwise show that cost per EFTS for major technical institutes is $1,500–2,000 per capita per year. Other exceptions are Solomon Islands, where funding is allocated to an institution classified as higher education, and institutions in Tonga. Other institutions such as vocational centers in the Fiji Islands and technical schools in PNG have EFTS costs substantially below those of the major institutions.

## External Financing

External funding is an important component of finance in most states and enables various improvements and initiatives to take place without drawing significantly on government revenues (Appendix 5). International donors such as AusAID; European Union (EU); Japan International Cooperation Agency (JICA); New Zealand's international aid and development agency (NZAID); Taipei,China; and the US; as well as international financial institutions, especially ADB and the World Bank, play a considerable role in financing TVET for PICs.

The northern Pacific countries of the RMI, FSM, and Palau have compacts of association with the US, which funds most of their education budgets (more than 50% for the RMI and 90% for the FSM). The Cook Islands, Kiribati, Nauru, and PNG also receive large development assistance grants from AusAID, NZAID, and EU. The Cook Islands particularly depend on the EU and NZAID for TVET funding as only 23% of the TVET budget comes from government funds. JICA has paid for both Samoa and Tonga to extend and refurbish their technology institutes. The Fiji Islands is the recipient of funds from AusAID for the equipping of nine TVET centers and of technical assistance in entrepreneurship education and industry–school compacts. Kiribati has received EU help in constructing a new workshop at TTI. PNG receives a development budget that represents an additional 17% of the government allocation. AusAID is assisting Vanuatu—over 6 years, starting in 2005—with a TVET sector-strengthening program that seeks to improve TVET institutions, including nonformal institutions and VNTC. AusAID's short-term training program has enabled PICs, such as Kiribati and Tonga, to run programs not otherwise offered in those countries by their TVET systems.

Regional projects sponsored by the Commonwealth of Learning have assisted with funding for the establishment of PATVET and supported the development of open distance learning. The PRIDE project, funded by the EU and NZAID, offers substantial planning assistance to Pacific ministries of education though, to date, relatively little has been done in the TVET area. AusAID recently initiated assistance for postsecondary technical training by establishing the Australia–Pacific Technical College (APTC). APTC will eventually operate in four countries in the region to produce "work-ready" Pacific island graduates who meet Australian standards (Appendix 5).

Across the Pacific, most informal sector training is provided by NGOs, which are heavily funded by international development partners. ADB has provided grants and loans (RMI, PNG, and Tuvalu) for informal sector livelihood improvement projects and microcredit schemes. The Pacific receives one of the developing world's highest per capita rates of funding from development partners, and some of this flows into the TVET area. Yet there is substantial scope for a coordinated regional approach by funding agencies and financial institutions to support long-term sustainable improvements in the formal and informal TVET sectors.