

...e, increasingly, prioritising higher education, which makes the publication of this
...acific region particularly timely. Running throughout the various contributions in
...mmitment to the development of local research capacity, and to the potential
...nformed by Pacific values and experience. In times when the intensification of
...n the uncritical, and often inappropriate, impact of international policy transfer,
...h capacity building is vitally important. Higher education is being increasingly
...worldwide and this is reinforced by the publication of this informative book in
...efore, welcome this book and the contributions of these Pacific voices to the

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...esake Rawaikela Dakuidreketi and Govinda Ishwar Lingam provide a unique
...icy makers and practitioners in the Pacific region with a particular interest in
...ns of higher education in the developing island world of Oceania. Written by
...me-grown' within the region, the book provides insight into a wide range of
...eached there. Future directions of research in the Pacific gain first attention,
...n of the impact of continual change in critical areas such as teacher education
...uates. One chapter ruminates on how the university sector can contribute to
...marine sector, an enormously important resource base for all countries in the
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...important chapters finish the book with a resounding flourish. The penultimate
...rtunities emerging for the region in the train of globalisation and transnational
...cation, and the potential this offers for the sharing of knowledge, while the
...e challenges of e-learning for the region. Overall, this is an engaging text that
...whelmed by the challenges facing the Pacific region at a time of imponderable
...nological change.

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Higher Education & Community Engagement in the Pacific

Higher Education & Community Engagement in the Pacific

Development and Policy Issues

Edited by
Mesake Rawaikela Dakuidreketi
Govinda Ishwar Lingam

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USP Book Centre

Building capacity in the marine sector in the Pacific Islands and the role of The University of the South Pacific

Joeli Veitayaki and Pio E. Manoa

Introduction

The 1982 United Nations Convention on the Law of the Sea and its consequent establishment of maritime zones has caused an enormous increase in the sizes of the sovereign territories of the Pacific Islands States. While the new wealth and resources associated with these extended areas are largely untapped, the burden that they place on the custodians is overwhelming. For instance, since the United Nations Conference on Environment and Development (UNCED), the development of international instruments has given greater responsibilities for Pacific Islands to exercise control and instigate the proper management of marine resources, stretching their human and capital resources to the limit. In addition, a range of factors requires capacity in these countries that is either poorly effective or not available. The factors include the growing population pressures, the newly evolved needs, the pollution and alteration of sensitive coastal environments, greater pressures on the reefs and lagoons fisheries, increasingly lucrative opportunities to give distant water fleets access to the deep sea fisheries in their economic zones, dwindling resources, an emphasis on economic development focusing on ocean resources, and the development of new technology in aquaculture, post-harvest fisheries, ornamental and aquarium trade and energy. These developments have resulted in an unprecedented expansion of activities in all areas of the marine environment (South & Veitayaki, 1998) for which capacity is required.

In the Pacific Islands, regional bodies such as the Pacific Islands Forum Fisheries Agency (FFA), the Secretariat for the Pacific Region Environment Programme (SPREP), the Secretariat for the Pacific Community (SPC) and the University of the South Pacific (USP) have specific mandates to assist the

Pacific Islands to meet some of their obligations according to the resource use and management agreements, treaties and conventions they have signed and ratified. The FFA guides the Pacific Island Countries in their management and development of the region's largest and most valuable resource – tuna – and coordinates the array of international instruments that the countries have formulated to exert control and manage their maritime zones and their resources (Veitayaki, 1994, 2005; South & Veitayaki, 1996). SPREP works with the member countries to formulate important instruments and programmes to manage, develop and foster appropriate responses to social and economic issues in the coastal zone of the member countries (SPREP, 1992, 1999). The SPC advises its members on the status of inshore fisheries (Dalzell & Adams, 1995a, 1995b; Dalzell et al., 1996), the state of the region's tuna resources and the status of its coral reefs (Grigg & Birkeland, 1997; Wilkinson, 1999). The SOPAC Division of SPC assists the Pacific Islands with EEZ boundary delimitation, coastal protection and sustainable living in small island environments (SOPAC, 1994). Lastly, the USP offers tertiary education, research and consultancy services to the member countries (Crocombe & Meleisea, 1998; South & Veitayaki, 1996).

For reasons such as lack of awareness in local communities and the need to promote changes, all the regional organisations in the Pacific Islands include capacity building as part of their activities (South, 1991b; Sutherland et al., 1991; Walton & South, 1992). However, the USP solely is responsible for tertiary training and education and provides the care of people to lead the sustainable use and management of the world's largest ocean in the future. This is a challenge to any training institution particularly to one that relies on twelve Small Islands Developing States (SIDS) member countries for its budgetary requirements. The USP, thus, has to find innovative ways to provide capacity in spite of all the limitations.

This paper outlines the role of the USP, specifically its School of Marine Studies in building capacity in the marine sector in the Pacific Islands. It discusses the effort taken to build human capacity in the USP region, the issues that need to be addressed and some suggestions on how the future demand can be met.

The University of the South Pacific (USP)

The USP was established in 1968 to serve eleven colonies, protectorates, territories and countries in the southwest Pacific that at the time were associated with the United Kingdom and New Zealand but preparing for political independence that they regarded critical for their economic development to improve their living conditions. It currently has twelve member countries (Cook Islands, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu and Vanuatu) and serves a region of more than 33 million km², extending both sides of the equator and the international date line. The scattered clientele has made extraordinary demands on the design, development and delivery of USP programmes to meet the needs in its diverse area of operation.

The history of the USP and the issues associated with how it has served the Pacific Islands region, are provided in Crocombe and Meleisea (1998), which describes a unique regionally owned institution of higher learning – only the second of its kind in the world; a pioneer and leader in the development of distance and flexible learning (South & Veitayaki, 1999); a melting pot of races and cultures that has produced amongst the highest number of prime ministers and politicians in the world and the breeding ground for leaders who will strengthen regional collaboration in years to come. Nevertheless, USP must persist with its efforts to serve the Pacific Island Countries human development needs to remain relevant. This requires that the USP continually assess its programmes and courses to ensure that it builds human capacity in areas that best meet the needs of its member countries and the international community. After all, with what people are now required to do to manage their work activities, appropriate training is fundamental.

The USP is the premier tertiary education in the Pacific Islands region. The University Charter outlines its aims to: maintain, advance and disseminate knowledge by teaching, consultancy, research and the provision of appropriate education and training responsive to the well-being and aspirations of Pacific communities (USP, 2012). The USP vision is to: be proactive in recognizing and meeting the higher educational needs of member countries; deliver quality learning and teaching, research, and enhance quality in all university services; be highly regarded locally, regionally and internationally; and provide relevant

and sustainable solutions contemporary challenges across the Pacific (USP, 2012: 26).

USP is a multi-module university offering courses face to face, and by distance and flexible learning (DFL) in a variety of modes including print, face to face, blended and on-line. More than fifty percent of the students study by DFL using the university's sophisticated and state of the art satellite communication network, USP Net. The newly opened Japan-Pacific ICT (Information and Communication Technology) Centre, has enhanced the interaction, information, research and higher learning between all of the USP Campuses (USP, 2012: 26).

The main USP campus is in Laucala Bay, Suva, Fiji. In addition, there are campuses for the School of Agriculture in Apia, Samoa, and the School of Law and the Pacific Languages Unit in Port Vila, Vanuatu, and Regional Campuses in each member country with the exception of Tokelau, which is served from the Apia campus. There are two other campuses in Fiji – one each in Lautoka and Labasa. All of the USP campuses are linked by a new real-time satellite network (USPNet), which allows for audio-visual communications and data transfer through a dedicated system. Learning and Teaching is conducted through - the Faculty of Arts and Law, the Faculty of Business and Economics and the Faculty of Science and Technology and Environment while the College of Foundation Studies, Centre for Flexible and Distance Learning, Student Learning Support, Regional Centre for Continuing Community Education, the Pacific Centre for Environment and Sustainable and the Confucius Institute provide for specific interests and needs.

Study programmes include pre-degree studies at Preliminary, Foundation, Certificate and Diploma levels, Bachelor's degrees and postgraduate qualifications at the Certificate, Diploma, Master's and Doctorate levels. In the Faculty of Science, Technology and Environment, emphasis is on using scientific methods and techniques to better understand the environment, resources, sustainable development, regional partnership, innovation and creativity, increasing human capacity and the application of these concepts to the management of island environment and human resources in the Pacific region. Approximately 20,000 students are registered annually in full-time and part time programmes of study.

The School of Marine Studies (SMS)

The initial USP contribution to marine studies research, education and training was through its Biology Department in the then School of Pure and Applied Sciences (SPAS) and the Institute of Marine Resources (IMR). At that point, the emphasis thinking was on marine studies as the realm of scientists and fisheries experts. The SPAS and the Biology and Chemistry Departments produced the generalists who were the first to take up senior positions in the government and research institutions in the member countries. The IMR, on the other hand, focused on the practical training in fisheries and marine science but at the pre degree level.

Established in 1978 to provide USP's initial marine research and training, IMR offered the Diploma in Tropical Fisheries (DTF), which was taught until 1990, when the decision was made to foster higher level scientific qualification for leadership of the diploma graduands that were in the region. The appointment of the Professor in Marine Studies marked the commencement of new focus in marine studies. Pre degree marine science courses were replaced by degree level courses while new staff appointments were made in SPAS. By that time, a majority of the total of 145 graduates from the DTF programme were occupying middle to senior positions in Fisheries Departments in Pacific Island Countries.

In 1986, in collaboration with the Forum Fisheries Agency, and in recognition of the urgent need to develop capacity in resources management within the region, the University established the Ocean Resources Management Programme (ORMP) in the School of Social and Economic Development. This calculated decision was to encourage the involvement of social scientists in marine resources management, ensure that scientists did not dominate the initiative and emphasise the importance of political will, economic, social and cultural factors that are critical for the sustainable management of marine resources – the region's most important resource. Initially funded by Canada, through the International Centre for Ocean Development (ICOD), the new Programme offered degree courses that could be a part of any USP students' programmes. The ORMP also provided short-term intensive training. This two-pronged approach provided training on the new issues, as well as introduced students who will manage the fisheries and marine resources in the

region to important developments such as the United Nations Convention on the Law of the Sea (UNCLOS), sustainable fisheries and deep seabed mining as they unfold.

The University took over the ORMP after the FFA funding for ORMP ended and added more staff and courses. ORMP made way for the Marine Affairs Programme and by this time, was offering double major in marine affairs in the School of Social and Economic Development (SSED). At this point, the double major in Marine Affairs consisted of four courses at the 200 and 300 levels that were added to other relevant courses from all other disciplines cross the USP. The thinking at the time was that as long as the USP graduates were aware of marine resource management issues within the region, it really did not matter where and what type of work they end up doing.

These two programmes were in 1993 made a part of the Marine Studies Programme (MSP) the forerunner to what is now the integrated School of Marine Studies in the Faculty of Science, Technology and Environment (FSTE). Under the leadership of a Professor of Marine Studies, the MSP was established to house all marine-related activities at the USP. This was part of a five-year plan adopted by the USP Council in Tarawa, Kiribati, in 1991 to make the MSP a university-wide, interdisciplinary programme focusing on training, education, research and service to its member countries (South, 1991a). This move closely mirrored the developments taking place globally and in the Pacific Islands region. The United Nations Convention on the Law of the Sea has been negotiated and adopted and has made small Pacific Islands into large Ocean States with serious economic development potential and of course the responsibilities look after their interests.

The importance of the ocean and its resources and the implications for the USP region in meeting their individual and collective obligation as well as attaining maximum return for themselves and humanity was recognised and acted upon. Since its 1998 Strategic Plan, the USP has recognised MSP as a priority development.

The first external review of the MSP in 2005 proposed the formation of the School of Marine Studies (SMS). This advice was put into practice for the first

time in the now disbanded Faculty of Islands and Ocean where the mission is to provide:

- the necessary opportunities for Pacific Islanders to understand, conserve, develop, manage and utilise their living and non-living marine resources in a rapidly changing world
- Pacific Islanders the widest possible range of opportunities for research, education, training and employment in the marine sector.

The aim is to develop SMS into an internationally recognised centre of excellence that promotes a multidisciplinary and integrated approach to the study of the oceans. This approach places equal emphasis on the description and quantification of what is there (e.g. monitoring ocean currents or surveying coral reefs) and the use of what is there (e.g. articulating ocean law and how to manage EEZs, developing tools for fisheries management and understanding the economics and politics in the Pacific Islands and global contexts). The approach promotes the description of the components of the tropical and subtropical marine environments in the Pacific Islands, explaining how they interact and determining how they are to be sustainably utilised by minimising environmental degradation and preventing the extermination of species and communities.

SMS adopts two strategies, because of the conditions in the region. The first focuses on long-term academic programmes that include pre-degree, undergraduate and postgraduate programmes for people who are able to attend classes at the main campuses. The second strategy is short-term training through workshops and seminars that target decision-makers who are unable to attend classes conducted in the campus. The realities of Pacific Island Countries life make both approaches necessary. There is a real need for science-based technical expertise and skills provided through the formal education process. In addition, the practitioners who are unable to attend formal university programmes and yet have an equally pressing need to be familiar with the demanding range of continuous changes taking place are provided the training opportunities to prepare for their responsibilities.

Similarly, the undergraduate, certificate and diploma courses are also available through Distance and Flexible Learning (DFL) to ensure the accessibility

of these programmes throughout the region. The pre degree qualifications are structured so that credits obtained in the Certificate contribute to the Diploma and ultimately to the Degree programmes. Contemporary research interests in marine studies have widened and enhanced post graduate research which are providing welcomed new information that are useful in the future development of marine resources. Research into ocean law and policy economic instruments for effective control and community based resource management, and ornamental fish have all been undertaken in collaboration with government, donor and development agencies and the private sector. Similarly, pearl, prawn, seaweed and crab culture as well as post-harvest fisheries are being researched and trialled to determine their viability to create new opportunities at the national level.

The SMS is made up of the following units that reflect the variety of training activities and areas that they emphasise:

- multi- disciplinary academic programmes in Marine Affairs and Marine Science)
- short-term training on topical issues organised in partnership with the International Ocean Institute – Operational Centre for the Pacific Islands (IOI-PI) to create awareness and promote research
- consulting and applied research undertaken by the Institute of Marine Resources (IMR)
- the Pacific Islands Marine Resources Information System (PIMRIS) that fosters information exchange and accessibility across the region.

The Marine Affairs programmes reflect the array of needs within the region and the principle that resource management is about managing human use of the resources than about managing the resources. Thus, the focus on islands, marine resources management, economic benefits, community-based management, integrated coastal management, post-harvest fisheries, ocean law and policy, governance, equity, peace and sustainability all emphasise the importance of getting human societies better organised. This organisation should involve the operation of good institutions as well as the formulation of effective instruments that are adhered to by all stakeholders. However, good

and effective resource management is dependent on the use of up to date information that is to be provided by marine science.

The Marine Science programmes focus on better understanding tropical ecosystems, fisheries biology, oceanography, marine pollution, post-harvest fisheries and aquaculture. Marine scientists conduct research in the laboratories and in the field, and have to find new resources while looking after the state of current ones. With the alteration of the natural environment, marine scientists have to provide scenarios and possible explanations and options, which must be passed to the decision makers to determine the appropriate cause of action to take. Special initiatives currently emphasised include research programmes in marine food science, coral reefs and marine habitats, sustainable fisheries, community-based resource management and aquaculture. Expertise in both marine affairs and marine science are required in the Pacific Islands region which is responsible for looking after the resources under the 33 million square kilometres of water under the jurisdiction of Pacific Island Countries.

Regional and international linkages are integral to the work of SMS. Regional links are encouraged and facilitated through USP's campuses throughout the USP region. USP is a member of the Council of Regional Organisations in the Pacific (CROP), which coordinates the work of regional organisation to enhance effectiveness and reduce duplication of effort and wastage. Additional linkages exist with institutions such as the Université Fran`aise du Pacifique in Papeete and with ORSTOM (Institut fran`ais de recherche scientifique pour le développement en coopération) in Tahiti and New Caledonia; development agencies such as JICA and non-government organisations such as IUCN, WWF and Greenpeace. These linkages ensure the sharing of resources that allow the engagement and involvement of more Pacific Island communities.

International assessments and global researches have involved SMS to coordinate the engagement of the regional countries. These initiatives include the Global Coral Reef Monitoring Network (GCRMN) for which SMS was a node, the Coral Reef Initiative in the South Pacific (CRISP) where the USP was a partner and the Millennium Assessment where SMS was responsible for a Sub Global Assessment site. These international research projects have been welcome because they provided much needed funding support as well as the

opportunity for staff members and students at SMS to work and collaborate with internationally acclaimed scientists and experts.

The SMS has enjoyed long term research links with the National Fisheries University of Japan, which enabled SMS students and staff to participate in their scientific cruises on the whenever the research vessel arrives in Fiji. The SMS also has a long-standing relation with Kagoshima University in Japan, Dalhousie University in Canada and Otago University in New Zealand. Recent years has seen increased collaboration with the Australian Centre for International Agricultural Research (ACIAR) in the area of marine studies while increasing number of Japanese, Korean and European institutions are negotiating collaborative arrangements with USP. Bergen University in Norway, which has supported extensive social anthropological research in Solomon Islands and Vanuatu is one of four European universities that teach Pacific Studies and are looking to work with USP on joint research project on the social impacts of climate change.

Marine studies have been an area of focus at USP for a good part of the last decade. The objective has been to promote the capacity of Pacific Island Countries to maximise their benefits from their use of the marine resources in their maritime zones while jealously protecting the health and integrity of the diverse ecological system. At the moment, the Pacific Ocean and Fisheries Management is one of the six research cluster areas now emphasised by the USP. Under this initiative directly under the leadership of the VC, USP has provided seed fund to stimulate multi-disciplinary research in the six chosen areas. The initial \$100,000 support for the Pacific Ocean and Fisheries Development has been allocated to conduct bio prospecting studies in the Solomon Islands, whale watching training in Tonga, publish a marine algae guidebook for Samoa and publish a report on destructive fishing report from Kiribati.

The Korean Maritime Institute aims to work with Pacific Island countries to pursue the sustainable management of fisheries resources. The Koreans are also interested in working with the Fiji Government and USP on restocking of fishing grounds. In the area of climate change adaptation, there is interest from European institutions to work with USP colleagues as well as Pacific Island communities.

Training programmes

Training programmes have a special place in the USP region because of the capacity building needs and the inability of all to attend USP. These short training have also served to address specific training needs. Some of the training are to upgrade skill while others are to serve specific objectives. Over the years, USP and SMS have offered training in the areas of coral reefs, fisheries management, marine plants, coastal management, oceanography, aquaculture and post-harvest fisheries. Since 2003, for example, SMS and IMR have hosted Tropical Marine Ecology students from Macquarie University in Sydney on a three-week course. The students cover the special tropical habitats such as sea grass beds, mangrove forests and coral reefs and look at the use and management regimes currently used in Fiji and conduct extensive fieldwork.

PIMRIS (the Pacific Islands Marine Resources Information System), a regional information network shared with the SPC, FFA, SPREP and SOPAC has been offering training to national libraries that provide their information to the network. With easy access to the Internet, PIMRIS services have expanded considerably to allow on-line access to global databases as well as enable the transfer of articles through an electronic form of inter-library loan service. The PIMRIS coordination unit at USP is rapidly growing as an important resource for undergraduate and postgraduate students, academic staff and visitors. It recently helped produce the Reef base Pacific database, which not just list the articles but also provide soft copies and the PIMRIS Portal that conveniently list all fisheries materials available in the USP library.

The IMR has published many reports on marine issues highly relevant to the region (Seeto & South, 1994). Sadly, IMR has been affected by the 1991 USP Council decision to move IMR to the Solomon Islands. The IMR's new site in Aruligo was a victim of the ethnic unrest in Honiara, and remains something of a political football as it awaits the USP Council's decision on where it should be based. IMR's current research is now focused on leadership training and engagement, aquaculture and coral reef studies.

The International Ocean Institute – Pacific Islands (IOI-PI): was established at USP in 1993, and has been involved in a variety of activities that were part of the IOI's global network. The IOI, with its headquarters in Malta was

founded by Professor Elizabeth Mann Borgese to advocate the acceptance of the UNCLOS and the peaceful use of the world's ocean resources by governments, states and the international community. IOI organised the first ocean resources management training and the establishment of the ORMP. Since then, it has collaborated with Governments, as well as USP and other institutions to offer resource management advice, conduct training and research and promote the strength and benefits of UNCLOS to the peaceful use of the world's marine resources. IOI set up IOI-PIAs - one of its first four Centres around the globe to coordinate its activities in the Pacific Islands region where it has offered a variety of training activities including the Leaders' Seminars, short courses (of up to five weeks' duration) on Resource Economics, Integrated Coastal Management for Small Islands, Coastal Fisheries Management and Development, Responsible Fisheries and Economics for Community-based Development Projects and marine awareness workshops.

The link with the IOI provides a window to the outside world with links to IOI Headquarters in Malta as well as the 25 Operational Centres in Canada (IOI-Halifax), South Africa (IOI-South Africa), India (IOI-Madras), Senegal (IOI-Senegal), Costa Rica (IOI-Costa Rica), China (IOI-China), and Japan (IOI-Japan). As one of the founding Centres, USP had benefited from extensive funding support that allowed Pacific Islanders to access ocean resource management training courses around the world and to prepare and offer some of their own.

For example, IOI organised the Independent World Commission on the Ocean (IWCO) in 1995 to keep the focus on the UNCLOS 14 years after it was signed in 1982. This Commission was IOI's contribution to the celebration of the United Nations' International Year of the Oceans in 1998. As part of the awareness work, a brochure outlining some aspects of the Convention on the Law of the Sea and the reasons why these were important to the Pacific Islands was produced (Veitayaki, 1996) and distributed in the USP region, with the invitation that people involve themselves in the activities of the Independent Commission and at the hearings in the places where these were organised around the Pacific Islands. More than 1000 people attended the hearings in seven of the regional countries and offered a useful forum to discuss the issues facing the countries in terms of their benefits and responsibilities under UNCLOS.

IOI-PI in 1998 successfully hosted at USP (Peace in the Ocean 27), the once in two years' conference of the IOI. A total of 187 delegates from 40 countries participated in the Conference, for which the theme was 'Oceans in the New Millennium – Challenges and Opportunities for the Islands'. A rich volume of information was gathered during the conference, and the Proceedings, as well as video and audiotapes of the entire conference were prepared and distributed to the IOI Centres to be used for teaching.

Since 2000, the IOI-PI has been a partner in the Train-Sea-Coast (TSC) Programme and other UN-type courses promoted by the UNDP. Two TSC courses have been prepared and offered by the Centre at the USP. The courses on Responsible Fisheries – the implementation of Post-UNCED international instruments and the Economics for Community-based Development Projects – have been attended by almost sixty people from all sections of the marine sector within the region and beyond. There is a plan to offer a course on Pacific Islands Fisheries Evidence and Investigation in May 2012.

IOI-PI is now supporting SMS in the offering of its programme. The IOI-PI has conducted national marine awareness training in Fiji, and in other Pacific Island countries. The IOI's Women and the Sea Project provided funding to assist rural communities in the Pacific Islands in the management of their resources and the improvement of their living conditions. IOI-PI is focussing its support to help convince people that managing their environmental resources may be the best and only viable way they can prepare for the future. It is funding the community-based sustainable development activities that are undertaken in Gau Islands and some of the Pacific Islands. IOI-PI is assisting community groups with their resource management activities and the pursuit of alternative sources of livelihood. Since 2006, IOI-PI has collaborated with Frontier-Fiji for the survey of the marine resources in Gau Island. The survey is conducted by research assistants who have paid to come from the United Kingdom to assist the local villages in Gau in this way.

Capacity building issues

Training challenges in the Pacific Islands include the identification of the training and education that are appropriate for the region, the prioritisation of these needs, the design and offer of necessary programmes in a timely fashion,

the compartmentalisation of training responsibilities and the duplication of effort. While the SMS and USP must decide on the type of training activities they provide, the activities must be based on what the countries need at a given time. Capacity building needs evolve continually and must be reflected by the training programmes on offer. At the moment, all the regional organisations provide training programmes, which are based on the organisational priorities and activities. This situation can pose difficulties if the training is not evaluated to ensure its suitability and quality. In many cases, projects address matters of capacity building only superficially, to meet minimal requirements of the project. Rather than address our problems, this approach only perpetuates the lack of certain capacity in the Pacific Islands. It is important to keep in mind that capacity building is a cross-cutting issue that needs to be addressed by proponents of a project. Capacity building is absolutely critical to the success of any project and training institutions must address it with vigour and rigour to ensure the quality of their products.

The duplication of effort is a constant worry given the diverse range of training the regional organisations offer and the close links between the areas covered by these organisations. At present, regional organisations offer courses that are part of their projects. There is little recognised formal qualification and little coordination. Some coordination is attempted through the Council of Regional Organisations in the Pacific's (CROP) Marine Sector Working Group but the situation needs to be improved to reduce the costs of duplication and improve the capacity of human resources within the region. Within USP, some evaluation and review must be made of all of its training programmes, while attempts need to be made to clarify the respective roles of the sections that are offering courses and training programmes. In 2008, the USP undertook a comprehensive quality audits for the first time in its 40-years of operation. This process has led to the Strategic Total Academic Review currently undertaken by the SMS, and USP to review their programmes to ensure that their courses meet the human resource needs of Pacific Islands and are not clogged by unnecessary duplication.

The SMS and USP must continue to address the wide range of issues that confront Pacific Islands. It must continue to provide the conduit between the needs of local communities and governments and the scientific research. This is important. Ocean resources management is about how people organise

their use of marine resources at different levels to ensure sustainability. This relation between the people's use of the resources and their organisation of their activities is in a continual state of flux, which must be reflected in the training and education programmes. A disjuncture between knowledge and practice is intolerable. The community-based resource management approach now used in the Pacific Islands is an interesting example where research and the organisation of human activities are applied in the coastal communities that are working to manage their inshore fisheries resources better. The results have indicated an effective system of managing inshore fisheries resources (Veitayaki et al., 2002, 2003).

The lack of maritime training at SMS is an unfortunate problem given the importance of shipping and sea transport within the Pacific Islands region. Most of the existing training of this kind in this maritime region offers only certificates, from programmes that have been in existence for a long time. This in itself is inadequate, given the evolving needs and developments within the sector globally. It is essential to do more to meet the human capacity needs in this important area. Shipping and maritime transport are important to Pacific Islanders, who are talented and skilled maritime workers but need to meet international standards if they are to be a part of the global scene in which they work. The lack of advance maritime training opportunities deprives Pacific Islands of this important right, which only the lucky few access from abroad. The lack of scholarship in this area also deprive qualified Pacific Islands master mariners the opportunity to contribute to the future development of their sector.

The high number of people who are lost at sea annually is an indication of another serious problem existing in the Pacific Islands. To reduce their costs and meet their responsibilities, a lot of people and some shipping companies take risks and shortcuts that result in loss of life at sea. People sail without adequate fuel, with engines that are not properly serviced, without oars, paddles or water. Moreover, the poor state of local shipping has meant the use of below standard boats in inter island travel, which is not only unsafe but extremely expensive. The high costs of fuel have worsened the problem as some parts of the countries are now isolated from the main centres and are serviced only intermittently. Training in safe practices can improve the situation in the Pacific and improve performance and efficiency. Sadly, most of

the Pacific Islanders have totally abandoned the use of sails, which can offer some relief in times of trouble out at sea.

Highly qualified tertiary level teachers, trainers and researchers are still in short supply in the Pacific Islands. In some areas, such as Fish Statistics; Taxonomy; Fisheries Biology; Post-Harvest Fisheries; Fisheries Economists; Ocean Law and Policy, there is a dearth of trained individuals capable of delivering the kinds of advanced courses and research programmes needed in the region. The SMS and USP therefore continue to rely on the services of non-regional academic staff until these shortfalls are met. The linkages forged with organisations and institutions within the region and globally can provide welcome opportunities in all areas of capacity building in the marine sector.

The SMS staff and students must leaders in their own right. They must forge partnerships with reputable research organisations and institutions and extend their activities to cover the region. These commitments must involve partners within the national and regional governments, which must put in place enabling mechanisms to aid the collaborations. The region expects nothing less as the people are custodians of the largest portion of the world's largest ocean and are likely to be dramatically affected by the impacts of global oceanic development and changes.

The SMS and the USP readily acknowledge the contribution of overseas donors and the international non-government organisations in this work. The Canadian Government, the French Government and JICA (Japan International Cooperation Agency) have been generous in their support of USP activities. In addition, private foundations and agencies in the USA, such as the National Fish and Wildlife Foundation, have been prominent in supporting applied research and community development activities that the SMS and USP offer. In an area where user pay arrangements are difficult to secure, the grants from these partners and their expertise have allowed USP to attempt some activities that it would have struggled to undertake on its own. It is hoped that the partnerships will continue so that the useful initiatives that have been undertaken are mainstreamed within the Pacific Islands and beyond.

The future

The SMS and FIO are cleverly formulated multidisciplinary programmes that provide for the education and training needs within the region. The offer of education and training programmes at different levels reflects the variation in education levels and requirements within the region. The linkages that the MSP has forged have allowed its involvement in training and research activities of partners from other well-established institutions. The SMS and FIO need to map their future activities in the same innovative way that it has worked in the past.

To be recognised as Centres of Excellence, the SMS and FIO must emphasise disciplinary rigour in their programmes. Both are ideally placed to make their mark as they are part of the largest tertiary institution in the tropical Pacific Ocean. The reputation of their study programmes and research will have to be earned to enhance their ability to attract talented students; staff and scholarships. SMS and FIO can attract this type of attention if the people are happy with the quality of the institutional performance.

The disciplinary and multidisciplinary rigour can be achieved either by revising the content and emphasis of existing courses or by adding new courses that relate to contemporary developments. In addition, it will be increasingly important to develop in SMS and FIO students the necessary critical skills to apply analytical thinking and problem solving methods and tools appropriate to the different situations they encounter in their work. Some of the skills that are required include the ability to make clear and concise presentations in English, to gather, interpret, manage and present data, to analyse and critically evaluate options and understand concepts such as integrated approach, good governance, accountability, economic viability, sustainability and conflict resolution.

SMS and FIO must develop empirical and applied research methods in marine science and social science. SMS and FIO students and staff need to be aware of new developments within the specific disciplines as well as their own areas of interest within Marine Studies. The School of Marine Studies has been established but needs adequate resourcing to undertake activities that the region regards as priorities. The costs and benefits of SMS need to be properly

scrutinised from time to time. For example, the establishment of a maritime and shipping stream will complement the training that is available only at very basic levels in national institutions.

USP staff and students must be engaged in primary research and given incentives to publish in refereed journals. This is important if new frontiers of research output and scholarship are to be pushed. A simple and relatively cheap way of improving on the research performance within SMS and FIO is to review current relationships with other CROP agencies and NGOs and explore the possibilities of developing partnerships. With the assistance and collaboration of CROP agencies, SMS and FIO can be better placed to obtain the scholarships for postgraduate students, which are critical for the advancement of marine studies in the region. SOPAC and SPC already actively assist with the teaching of courses and research supervision. However, extending the active collaboration to other CROP agencies remains highly desirable. It would be advantageous for these agencies to involve the University in running short-term courses and workshops, because the University is centrally located and has the facilities to run such courses. More active involvement of the CROP agencies in teaching and research would address regional needs more effectively. USP must ensure that PIMRIS is provided with copies of any publications and consultancy reports that can be used by Pacific Islands researchers.

USP must explore ways of increasing CROP agencies' involvement in SMS and FIO activities, including seeking ways of aligning student research topics more closely with CROP projects, and seeking short-term attachments for USP students. Furthermore, staff of CROP agencies must be enticed to offer postgraduate courses in their respective areas of expertise, where these are at present unavailable at the USP. The International Waters Programme is currently funding student fellowships that can be duplicated in other areas. Internships and attachments with the regional organisation can be arranged with different CROP agencies.

SMS and FIO also need to explore new alliances with established universities in the Pacific Rim countries to encourage staff and student exchanges, and with the assistance of donors, explore the possibility of developing joint degree programmes with other universities allowing the SMS and FIO to take

advantage of courses in advanced subjects offered elsewhere but currently not available at the USP. Clear formulation of the University's policy on international collaboration and partnerships could help ensure that the arrangements provide explicit tangible and/or intangible benefits for staff, the SMS, FIO and the USP. SMS must ensure that it enters into partnerships only after it has considered all the resource implications, including staff time. In determining whether collaboration would be worthwhile and consistent with their strategic plans and focus, the SMS and FIO must consider the potential benefits, beneficiaries and the costs.

SMS and FIO can still improve their presence in the region and their responsiveness to the needs of Pacific Island countries. This can be achieved with a better record for staff and postgraduate student publication; the establishments of networks and working relations with communities, civil society and government officials; regular attendance at and presentations of key research to regional meetings; and more effective collaborations on environment management research. The field stations in Dravuni Island, Kadavu, Fiji, and at the Atoll Research Program at Bairiki, Tarawa, Kiribati, must be resourced and fully used. These stations are critical to the conduct of research and keeping SMS and FIO in contact with the communities served.

The offer of many of the SMS and FIO courses through the DFL mode is appropriate for the region. However, the attempt must be made to address current problems facing extension students, who often are doing courses that are not of the same standing as the ones done by campus students. USP is now emphasising delivery mode with commitment of resources. Improvements in this area are expected to boost the offer of this unique, expensive and yet truly appropriate mode of education and training within the Pacific Islands region.

Training and education are long-term processes that must be nurtured over time. Over this period lessons from past training and education activities must be incorporated as part of contemporary training packages that will ensure that the future demands are well met. Training and education activities vary because of the diverse information requirements to ensure that marine resources are sustainably utilised. Marine resources need to be identified, assessed and used sustainably. This demands good understanding of the marine environment, life forms, ecosystems and their inter-relations. In addition, maritime zone

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boundaries have to be delimited and negotiated and outputs must be equitably distributed. Furthermore, international resource management instruments have to be ratified and implemented while governance issues and economic arrangements must be put in place. These are the reasons why training and education are expensive and need regular assessment of their relevance. SMS, and USP must continually review their programmes to ensure relevance, effectiveness and appropriateness.

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