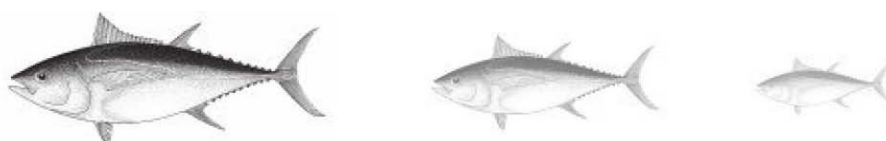


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Editorial



The International Day for Biological Diversity 2013, celebrated in May highlighted the important role of biodiversity and ecosystems in providing for water security and sustainable development worldwide. Water is vital for life. It supports human survival and well-being. And although our islands are surrounded by a vast ocean, we continue to face water shortages and droughts year round in many areas. This year's theme is an important reminder for all of us to protect, value and better manage our ecosystems and water resources (pp. 6-7).

In the last few months, several agreements were signed pledging millions in aid to support national and regional activities. Trainings, meetings and workshops were also held to better equip and inform regional participants for the improvement of services and life in the islands. Inter-island shipping services has been a challenge over the years and a recent meeting at the SPC office in Nabua discussed options towards regulating shipping in the central Pacific region (p.8). The Solomon Islands Ministry of Fisheries and Marine Resources workshop on aquaculture adaptation to climate change, the mangrove replanting project at the Fijian village of Nacula in the Yasawas, and the Marshallese-made fish food trial were successful activities we could all be proud of (pp. 9-13). Two academic staff from the USP School of Marine Studies attended the International Symposium on small island studies at the University of the Ryukyus in Japan in May and one reported on her tour experience (pp. 3-5).

We hope all investments and efforts by partners, groups, villages and organizations will translate to improved standards of living and better future for our region and people.

Susana Macanawai, *PIMRIS Coordinator*

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Spinner dolphin at Fiji's Moon Reef, off Takalana Bay
(Photo credit: Takalana Bay Retreat)

Directory

PIMRIS is a cooperative network of fisheries and marine resources libraries and information centres in the Pacific. Participants include national ministerial libraries and regional agencies listed below.

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New Faces, New Places

Welcome Pelenaise!

Pelenaise Timani is the new librarian for the Tonga Fisheries Library. She takes over the role after former librarian Emeline resigned and migrated to New Zealand. Pelenaise is also doing part-time studies at the Tupou Tertiary Institute in Tonga.



Pelenaise Timani

Bula Vasiti!



Vasiti Chambers

Vasiti Chambers joined the USP main library, Laucala Campus on 13 May 2013 as a Librarian. Vasiti previously worked as a librarian at the Fiji National University (FNU) Pasifika Campus, formerly Fiji School of Medicine.

Vasiti is located at the cataloguing section of the USP main library. She holds a Masters in Library and Information Studies from the University of Canberra, Australia and a Bachelor of Arts from USP.

Farewell Pam!



Pam Bidwell

After six years with the USP library and the School of Education, Pam has decided to move on to a new assignment and role at the University of New England in Australia. Pam was the coordinator for the Diploma in Library and

Information Studies (DLIS) at USP and had overseen the course since 2007. She was actively involved in promoting libraries and literacy through the programme and was very supportive of many Fiji Library Association (FLA) activities including the role of newsletter editor. Vinaka Pam and all the best!

Reflecting on fisheries and coastal management issues in the Okinawa Islands of Japan

By Dr Vina Ram-Bidesi
School of Marine Studies, USP

My colleague and I recently participated in an International Symposium on Small Island Studies at the University of the Ryukyus in Japan. During our stay, tours were arranged to allow us to see a wide range of coastal development activities around Okinawa and to discuss ways to further strengthen collaborative research between the two institutions. A short account on some of the activities, lessons and reflections are given.

Itoman Fish Market - We visited the Itoman fish and produce market. Itoman is a famous fishing town in Okinawa with rich maritime culture embodied in its unique folklores and customs. The songs, dances and festivals are based on stories surrounding fishing livelihoods, fishing expeditions and its trials and tribulations.

The fish market was well organized with live fish and invertebrates, chilled and frozen products as well as processed and preserved marine products. The variety of products sold ranged from whole fish to packaged ready to eat bite-size pieces. Japan is well known for its fish markets in terms of the variety of marine products produced locally as well as imported from all over the world. The fish markets are clean and maintain high standards of hygiene because of the culture of consuming raw products or "sashimi".

It was interesting to see that a large majority of the fish sold at the Itoman market were similar to those found at home like the tropical cods, rabbit fish, snappers and bream. The products in every stall looked fresh with no smell or flies. There was good ventilation, lighting, adequate supply of water and storage facilities. While the products looked fresh and clean, their prices were relatively high. In most cases they were three or four times higher than what I normally pay for the same fish in Fiji. Besides harvesting cost, the high prices reflected on the expenses associated with the maintenance of high food safety and quality standards, value addition to the products and transportation and marketing costs.

Am I lucky to pay four times less for my fish? Does the low price reflect on lost opportunities for fishers or am I being subsidized at the expense of future potential fishers? We never stop to reflect on why there is such a large gap between developed country fisheries and developing countries fisheries such as ours. Can we improve on our fish quality and hygiene so that we can have good fish that positively contributes to our health and nutrition?



Clean and fresh fish sold at the Itoman market.
(Photo credit: Vina Ram-Bidesi)

Fishers also do not have to sell a large quantity to maintain their expected income levels; instead they get optimum value for the smaller quantities of products they harvest. It is not the quantity that counts but the quality!

In addition to the disparity in purchasing power, the differences in markets also reflects the fisheries management regimes in place, level of consumer awareness and hence the demand for the variety of products. Raising awareness on improving post-harvest handling and processing is not only essential for supporting health and hygiene, maintaining food security and sustainable supply but it also contributes to market development.

Okinawa Prefectural Fisheries Research and Oceans Center - A senior scientist provided an overview of the center's research and development work. Of particular interest was the presentation on streamlining the effectiveness of the Marine Protected Areas (MPAs) by using scientific knowledge to identify the spawning and juvenile feeding grounds of high value fish like coral trout and emperor fish in order to protect their habitat. The center has also been successful in re-stocking reef areas with sedentary species like trochus, sea urchins, giant clams and turban snails.

Additionally, coral replanting projects have also shown positive results in some MPAs. The research center is an ideal place for short term placements either under JICA training for government fisheries officers, or for research attachments. The center's new and emerging research in mariculture is directly relevant to our region, since target species are common to both the Pacific and the Okinawan Islands.



The touring School of Marine Studies team with staff of the University of the Ryukyus in Japan.
(Photo credit: Vina Ram-Bidesi)

Disaster Prevention Research Center, Department of Civil Engineering and Architecture, University of the Ryukyus – The center's research focuses on streamlining the tsunami warning system; identifying civil engineering structures along coastal areas to reduce flooding and inundation from strong waves and typhoons and other options for coastal management such as reforestation.

The center not only looks at technical and scientific design aspects but also includes law and policy on integrated coastal management.

Given that, there are several governmental and other non- governmental agencies that deal with different aspects of disaster prevention and mitigation, the center's research work also attempts to explore more effective and efficient systems for information dissemination and ways to strengthen governance arrangements.

One of the major concerns has been the construction of sea walls, as the public demand for raising the height of sea walls keeps increasing following each natural disaster. The head of the center indicated that the design of seawalls is getting more sophisticated when considering durability against the cost factor. This is because Okinawa faces more frequent typhoons, which have smaller wave lengths, while a tsunami is far less frequent but can generate a much larger wave length and thus more destructive waves. Assessing long term costs and benefits of such exercises would be interesting for sound policy decisions. Prof. Nakaza, the head of the center, is currently supervising one of our former students, Rusila Savou, who is doing a PhD on coastal management at the University of the Ryukyus.

Sesoko Research Center - We visited the Sesoko Research Facility of the University of the Ryukyus, located on Sesoko Island in the northern part of Okinawa, which also houses the Tropical Biosphere Research Center. At the research facility, we saw the state of art laboratory facilities for tropical island research, including aquaculture tanks and a hatchery. The center has a programme that allows attachments for foreign visiting research fellows.

The Sesoko Station has two sections under its biological resources: marine ecology and marine reproductive biology. There were large scale fish tanks and well-equipped laboratory for scientific research.

The center also specializes in research on the reproductive characteristics of coral reef fish to better understand sex differentiation and determination that could provide new clues in fish culture. We witnessed large rabbit fish and groupers that were used as brood stock for hatchery cultivation.

The advances in this area of science on tropical reef fish culture is highly desirable, given that potential exists for cultivation and culture of high value reef fish that have been over-exploited. Opportunities could be explored for marine scientists and post-graduate students from USP for short attachments at the center to learn technical skills.

Indeed, Pritika Singh, one of our former USP students, successfully completed her Master's degree at the research center. Similar opportunities should be further explored to strengthen scientific research capacity in our region.

Okinawa Churaumi Aquarium -The Okinawa Churaumi Aquarium is known to be one of the largest aquariums in the world. The theme "Encounters with the seas of Okinawa" tries to recreate Okinawa's seas from the shallow coastal areas to the deep ocean. The exhibits allow visitors to experience the marine environment starting from the coastal beaches and gradually venturing into the deeper ocean. Displays and educational materials for awareness including coral reef ecosystems, freshwater systems, deep ocean specimens, whales and sharks are useful for a wide range of audience – young and old alike.

The aquarium holds a world record for keeping whale sharks and mantas in captivity and raising manta pups. Exhibits of living corals in open systems provide a good mirror image of the actual environmental conditions. This not only serves as an ideal educational kit but is also very useful for recreation and revenue generating opportunity.

While the large scale of the aquarium signifies massive demand for highly sophisticated hardware and software technology and maintenance costs, there is no reason why a much smaller size of aquarium that holds fewer key local species, such as those under threat, could be constructed for students and the public, locally and partially self-funded.

The more people are exposed to the variety and diversity of the marine environment and the deep ocean, the more they are likely to appreciate its role in supporting human life and recognize the future potential it could hold for them. As maritime communities, even though we are surrounded by the sea, our exposure to the richness of the oceanic environments is still very much limited.

The high technology and scientific skills required in collecting, raising and maintaining specimens can only be done in collaboration with developed country scientists and technicians such as the Churaumi Aquarium in Okinawa or the Marine Aquarium in Hawaii.

Opportunities could be explored for funding and support to establish a small aquarium closer to where the species are found. It makes more sense to hold species closer to the sources of supply to replenish larger aquariums while at the same time provide locals with educational and recreational opportunities.

The Okinawan Islands indeed present many interesting case studies for drawing lessons and pursuing collaborative research on coastal and fisheries management issues for small islands.

International Day for Biological Diversity



The International Day for Biological Diversity (IDB) was celebrated on the 22 May 2013 as proclaimed by the United Nations to increase understanding and awareness of biodiversity issues.

The theme Water and Biodiversity was chosen to coincide with the United Nations designation of 2013 as the International Year of Water Cooperation.

The United Nations Secretary-General in his speech to mark the day stated that 'although seemingly abundant, only a tiny amount of the water on our planet is easily available as freshwater. We live in an increasingly water insecure world where demand often outstrips supply and where water quality often fails to meet minimum standards. Under current trends, future demands for water will not be met'.

Furthermore, the Secretary-General emphasized that 'biodiversity and the ecosystem services it provides are central to achieving the vision of a water secure world. Ecosystems influence the local, regional and global availability and quality of water. Forests help regulate soil erosion and protect water quality and supply. Wetlands can reduce flood risks. Soil biodiversity helps maintain water for crops. Integrating nature - based solutions into urban planning can also help us build better water futures for cities, where water stresses may be especially acute given the rapid pace of urbanization'.

Fiji Celebrations

Fiji celebrated the day with the launch of the national environment campaign organized by the Department of Environment at Colo-i-Suva.

The chief guest at the national celebrations was the Minister for Environment, Colonel Samuela Saumatua who spoke about the importance of addressing issues relating to Fiji's threatened biodiversity.

In his address during the launch, Colonel Saumatua also highlighted that Fiji has a list of contentious environmental issues including but not limited to littering, pollution of land, water and the air, deforestation, and climate change.

He further stated that environmental issues impact Fiji's economic development, social stability and also contribute to environment degradation which in turn needs an integrated approach to address.

The launch was followed by a walk around the Colo-i-Suva Park.



(Photo credit: spc.int)

Sources:

<http://www.cbd.int/idb/doc/2013/messages/idb-2013-unsq-message-en.pdf>

<http://www.cbd.int/idb/>

<http://www.fijitimes.com/>

2013 - United Nations International Year of Water Cooperation

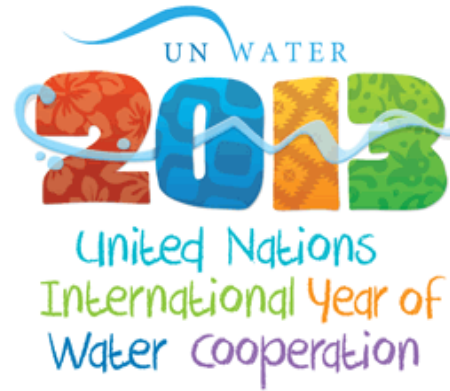
In December 2010, the United Nations General Assembly declared 2013 as the United Nations International Year of Water Cooperation ([Resolution A/RES/65/154](#)).

In reflection of this declaration, the 2013 World Water Day, which will take place on 22 March 2013, also will be dedicated to water cooperation.

Therefore, UN-Water has called upon UNESCO to lead the 2013 United Nations International Year on Water Cooperation, in particular because of the Organization's unique multidisciplinary approach which blends the natural and social sciences, education, culture and communication.

Given the intrinsic nature of water as a transversal and universal element, the United Nations International Year on Water Cooperation naturally would embrace and touch upon all these aspects.

The objective of this International Year is to raise awareness, both on the potential for increased cooperation, and on the challenges facing water management in light of the increase in demand for water access, allocation and services.



(Photo credit: Mamanuca Environment Society)

The Year will highlight the history of successful water cooperation initiatives, as well as identify burning issues on water education, water diplomacy, transboundary water management, financing cooperation, national/international legal frameworks, and the linkages with the Millennium Development Goals.

It also will provide an opportunity to capitalize on the momentum created at the United Nations Conference on

Sustainable Development (Rio+20) and to support the formulation of new objectives that will contribute towards developing water resources that are truly sustainable. Celebrations throughout the Year will include featured events at UNESCO Headquarters in Paris, as well as many other events organized by various stakeholders around the world. Such events will seek to promote actions at all levels in relevant areas including education, culture, gender, the sciences, conflict prevention and resolution, as well as ethics, among others.

To know more about the 2013 UN International Year of Water Cooperation please contact Lucilla Minelli at: l.minelli@unesco.org.

Reprinted from: <http://www.unwater.org/watercooperation2013.html>

Commission to begin regulating Pacific shipping soon

The Central Pacific Shipping Commission (CPSC) – an initiative born out of Pacific small island states' calls for reliable, affordable and sustainable shipping – moves steadily towards donning its much awaited role of regulating shipping in the central Pacific region later this year.

The CPSC Technical Committee, comprising permanent secretaries responsible for transport in Kiribati, Marshall Islands, Nauru and Tuvalu, met at the Secretariat of the Pacific Community's (SPC) Suva Regional Office, Fiji from 21–23 May to begin preparatory work for the upcoming meeting of CPSC commissioners (ministers of transport) in mid-2013. Once the commission begins operation, companies vying to provide a shipping service to the central Pacific countries will be required to register with CPSC and allowed to operate in the area only with the commission's approval.

Shipping companies that currently provide service to Kiribati, Marshall Islands, Nauru and Tuvalu include Matson, Neptune Pacific Line, Pacific Direct Line and Swire.

'Countries such as Nauru and Kiribati get a supply of cargo once a month and the critical service that shipping provides is best appreciated when these nations literally run out of food when a ship does not arrive as scheduled,' said SPC Shipping Adviser, John Rounds, who is heavily involved in CPSC work.

'The CPSC Technical Committee was encouraged by the discussions they had with Matson, Neptune Pacific Line and Pacific Direct Line during their meeting in Suva. It was the first time CPSC had engaged with shippers directly to discuss the challenges shippers currently face when providing services in the CPSC region,' John Rounds said.

For most ships, it is one-way traffic when it comes to servicing small island states; empty containers are shipped back due to limited exports. Then there is an added biosecurity/quarantine cost to ensure that the containers brought back are clean, as it costs around FJ\$300 per container for fumigation. Challenges that shippers face with regard to inadequate port infrastructure in Kiribati and Nauru will soon be a thing of the past. Port upgrades in Kiribati are almost complete and ships will now be able to berth and discharge cargo alongside the wharf.



The 'Forum Fiji' ship that services Australia, New Zealand and the Pacific Islands. (Photo credit: Pacific Direct Line)

Furthermore, Nauru, funded by Japan, is planning to build a new wharf, which is expected to reduce ship turnaround time from four days to one day. Until the commissioners' meeting, SPC will be working with the CPSC Technical Committee to operationalize the commission. A call for expressions of interest will be made after CPSC ministers of transport endorse all relevant operational documentation.

CPSC, comprising the governments of Kiribati, Nauru, Marshall Islands and Nauru, was established in 2010 and has its secretariat functions managed by SPC.

SPC New Release (May 2013)

News from around the Region

Solomon Islands stakeholders in fisheries and aquaculture identify priority adaptations to climate change

The Ministry of Fisheries and Marine Resources (MFMR) of the Solomon Islands and the Secretariat of the Pacific Community (SPC) organized a 2-day workshop in April 2013 to help stakeholders in the fisheries and aquaculture sector identify priority adaptations to climate change.

This initiative is in accordance with three priorities of the Ministry's Corporate Plan 2011 – 2013 which are: (1) 'grow livelihoods through sustainable aquaculture development', (2) 'improve health of our fisheries and marine resources' and (3) 'grow our economy through sustainable fisheries investment'.

The workshop was attended by staff from MFMR headquarters and provincial offices, other government ministries and several non government organization partners. Participants learned about the effects of global warming and ocean acidification on the ecosystems and stocks supporting fisheries and aquaculture, and the consequences for economic development, food security and livelihoods.

'The aim of the workshop was to determine how best to build the resilience of coastal communities, and enterprises based on tuna, to climate change', said the Director of Fisheries, James Teri. 'Ultimately, we would like all stakeholders to identify adaptations that minimize the risks posed by climate change, and maximize the opportunities', he said.

Participants heard how some resources are expected to be losers as the climate changes, and that others will be winners. They also learned that the valuable tuna resources of the region are likely to be redistributed progressively to the east due to climate change.



(Photo credit: Ministry of Fisheries and Marine Resources, Solomon Islands (MFMR))

'Provided tuna stocks continue to be well managed there should still be large quantities of tuna in Solomon Islands' waters for many years to come', said Dr Johann Bell from SPC. 'And the Government has many options to help secure any additional tuna needed to supply the proposed new canneries and processing plants in Solomon Islands when decreases in tuna catch eventually do occur', he said.

Another important message at the workshop was that continued degradation of coral reefs due to increases in coral bleaching and ocean acidification are expected to reduce the productivity of coastal fisheries by 20 percent by 2050.

'This will reduce the amount of coastal fish available for food security', said Rosalie Masu, Deputy Director Inshore Fisheries at MFMR. 'But our most immediate challenge is to provide access to more fish for the nation's rapidly growing population so that we can maintain our healthy levels of fish consumption', she said.

'A gap is emerging between how much fish we need for our food security and how much fish coastal habitats can provide', said Rosalie. 'We need to manage our coastal fish habitats and stocks well to reduce the size of this gap, and then find ways to fill the gap so that we can continue to eat the amount of fish we should', she said.

The workshop emphasized that two of the management options already under consideration to increase access to fish – inshore fish aggregating devices (FADs) and small pond aquaculture – are practical ways to fill the emerging gap. They are also effective adaptations to climate change because FADs will help supply fish as reefs degrade and pond aquaculture will be favoured by the projected increases in rainfall.

'WorldFish, SPC and other partners are assisting MFMR to evaluate and implement these ways of increasing access to fish', said James Teri. 'Tuna caught by communities around FADs will need to provide most of this fish but pond aquaculture will help supply fish for those communities with limited access to tuna', he said.

The workshop concluded that such win-win adaptations – those that supply fish for the food security of the rapidly growing population and which promise to increase access to fish as the climate changes – are prime investments for the nation's development partners.

(Adapted from a Press Release from the Solomon Islands Ministry of Fisheries and Marine Resources)



Family members sell skip jack tuna at the Honiara market, Solomon Islands.
(Photo credit: www.greenpeace.org)

Fish farming in Marshall Islands passes another hurdle

The first meal of Marshallese-made fish food was a big success, if you ask the *at kadu* that gulped it down enthusiastically last week.

The fish, known as moi in Hawai'i, and elsewhere as Pacific Threadfin, are being raised by Rongelap Local Government (RALGOV), in the first stage of a major fish farming project.



(Photo credit: PRLog)

“Development of a locally sourced and produced feed is key to the success of this project”, Honorable James Matayoshi, Mayor of Rongelap said, “This was a major step forward”.

“An important part of the feed produced was local fishmeal from Pan Pacific Food Company. We are fortunate to have fish byproducts that are readily available in RMI – and what could be better than recycling it into feed to raise locally farmed fish to improve food security, sustainability and create jobs for the Marshallese people?” said Dr. Warren Dominy, a globally acknowledged aquafeed consultant and recently retired Director of the Aquatic Feed and Nutrition Department (AFN) at the Oceanic Institute in Hawai'i.

Mr. Ryan Murashige, President and CEO Hukilau Foods Inc, Hawai'i, and Vice President of Hawaii Moi and Fish Company, an expert in both moi hatchery and grow-out operations, explained that the feed tested, though well accepted by the fish, was a preliminary diet for the *at kadu* sea cage system.

“The AFN Department at the Oceanic Institute, Hawai'i is analyzing the feed to make sure that we are meeting all the nutrient requirements of the fish”, he said. “Once we see the analysis we will fine-tune it to reduce cost, maximize health and growth”.

“In this initial feeding trial using the locally sourced ingredients, feed was made with a mixer and meat grinder and was tested with *at kadu* and with pigs. The animals ate all that was given to them”, Mayor Matayoshi said. “We are hoping to purchase a feed manufacturing system to utilize local ingredient resources to produce higher volumes of feed for the current production of *at kadu* and to produce feeds for local swine and poultry farmers”.

Since the first steps in creating an aquaculture industry in RMI were taken, significant progress has been made. “With collaboration between Mayor James Matayoshi, RALGOV, and The College of Marshall Islands (CMI) Land Grant Facility in Arrak, Majuro, we were able to achieve a 17 per cent survival rate in the hatchery phase with eggs purchased from the Oceanic Institute”, Murashige said.

The success of the first hatchery run conducted by the Rongelap hatchery staff, who were trained and instructed by Hukilau Foods, holds promise for *at kadu* fry health and condition.

More details: <http://www.prlog.org/12145266-fish-farming-in-marshall-islands-passes-first-hurdle.html>

Nacula Village, Yasawa, Fiji reclaims their Beach



(Photo credit: WWF South Pacific)



(Photo credit: WWF South Pacific)

The fight to reclaim their beach from the sea at Nacula village in the Yasawa Group, made another breakthrough when villagers recently planted 2,700 mangrove seedlings.

Both young and old took to the village foreshore to plant mangroves, united by a fervent desire to protect their village from the encroaching tide.

Nacula is one of four villages on Nacula Island that share similar experiences relating to coastal erosion.

Though a beautiful tourist hotspot, the beach on Nacula Island has literally been chomped up by the sea, exposing hard beach rock as occasional large waves hit against the fencing enclosing the Health Center and break even closer to the church.

Testament to the ruthless power of the ocean, uprooted trees litter the beach area and as Sakarai Navunisinu, the chairman of the Nacula Yaubula (Natural Resources) committee said, “Even towering coconut trees started falling!”.

“The sea is now around five metres past where it once rested.”

But Navunisinu concedes that the ocean isn’t entirely to blame for their battered sandy beach.

Villagers are at fault as well for extracting tons of sand for village building construction over the years and harvesting mangroves that once offered them coastal protection.

In August 2012, as an ecosystem-based climate adaptation measure, the WWF South Pacific AusAID Building Resilience team worked with the Nacula villagers in planting mangrove seedlings along their foreshore and setting up a mangrove nursery to supply future planting efforts.

Unfortunately, those seedlings were washed away by strong waves brought on by Cyclone Evan in late December, 2012 but villagers were determined not to be deterred from their quest.



(Photo credit: WWF South Pacific)

“It’s more than just saving the beach, we are also protecting our food security for we know that once we plant mangroves, we are helping build a nursery for fish to give birth,” Navunisinu said.

Copra used to be the mainstay for villagers, but more effort is now being placed on earnings from tourism and the sale of handicrafts.

“Although our people are employed at nearby resorts and we are making ends meet, the most important thing to consider is that we don’t go under the waves and that our children’s children will have food security in the future as

well,” Navunisinu said.

AusAID Building Resilience National Coordinator Stephanie Robinson said that the most important element in implementing climate adaptation measures at the community level is the people.

“They have to support it and take ownership of it, and this is something that we can witness in Nacula. As the village recognised the problem, they approached us for assistance and now they are actively involved in a replanting program to protect their foreshore, especially the elders, who understand the importance of seeing mangrove trees grow tall on their foreshore,” she said.



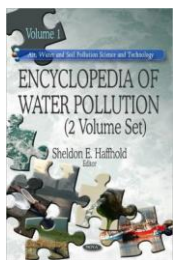
(Photo credit: WWF South Pacific)



(Photo credit: WWF South Pacific)

Source: <http://www.wwpacific.org.fj/?208574/Reclaiming-their-Beach>

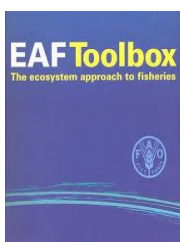
New Additions to PIMRIS Library



Encyclopedia of water pollution edited by Haffold, S. E. Vols. 1 & 2. New York : Nova Science Publishers, c2011. ISBN: 9781617618321.

This book presents important research advances in the study of water pollution, as well as marine pollution, river pollution, lake pollution, water purification, cruise ship pollution and the acidification of the earth's oceans.

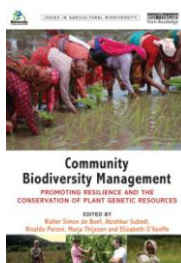
More details: https://www.novapublishers.com/catalog/product_info.php?products_id=17860



EAF toolbox : the ecosystem approach to fisheries by the Food and Agriculture Organization of the United Nations. Rome, Italy : FAO, c2012. ISBN: 9789251072677.

The EAF Toolbox has been designed to guide users through each of the four main EAF management planning steps and activities using simplified text and clear instructions. It also helps users decide which tool(s) could be most appropriate for each step given the type of fishery, their resources and capacity.

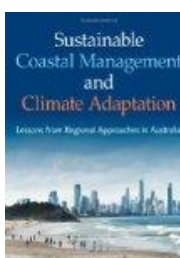
More details: <http://www.fao.org/fishery/eaf-net/topic/166272/en>



Community biodiversity management : promoting resilience and the conservation of plant genetic resources edited by W. S. de Boef, N. Peroni et al. Oxon, UK : Routledge, c2013. ISBN: 9780415502207.

This book offers inspiration to all those involved in the conservation and use of agrobiodiversity within livelihood development and presents ideas for the implementation of farmers' rights. The wide collection of experiences illustrates the efforts made by communities throughout the world to cope with change while using diversity and engaging in learning processes.

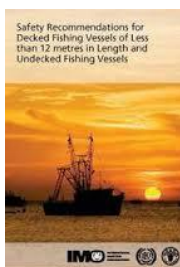
More details: <http://www.routledge.com/books/details/9780415502207/>



Sustainable coastal management and climate adaptation : global lessons from regional approaches in Australia edited by R. Kenchington, L. Stocker and D. Wood. Collingwood, VIC. : CSIRO Publishing, c2012. ISBN: 9780643100275.

This book explores the evolution of coastal management, and provides critical insights into contemporary experience and understanding of coastal management in Australia. It draws on contemporary theory and lessons from case examples to highlight the roles of research and community engagement in coastal management.

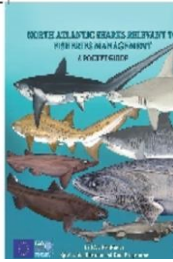
More details: <http://www.publish.csiro.au/pid/6510.htm>



Safety recommendations for decked fishing vessels of less than 12 metres in length and undecked fishing vessels by the Food and Agriculture Organization of the United Nations. Rome, Italy : FAO, c2012. ISBN: 9789251073971.

This book provides information on the design, construction, equipment, training and protection of the crews of small fishing vessels with a view to promoting the safety of the vessel and the safety and health of the crews. The Safety Recommendations may also serve as a guide for those concerned with the safety of vessels used in support of aquaculture activities.

More details: <http://www.fao.org/docrep/017/i3108e/i3108e00.htm>

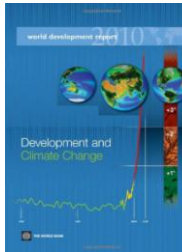


North Atlantic sharks relevant to fisheries management : a pocket guide by the Food and Agriculture Organization of the United Nations. Rome, Italy : FAO, c2012. ISBN: 9789251073667.

This pocket guide presents a fully illustrated identification guide to a selection of shark species of the North Atlantic. It includes 38 species selected as being most relevant to commercial fisheries, vulnerable to exploitation due to their life history characteristics, or taken in large numbers as discarded bycatch.

More details:

<http://www.amazon.com/Atlantic-Sharks-Relevant-Fisheries-Management/dp/925107366X>

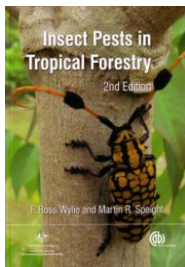


World development report 2010 : development and climate change by World Bank. Washington, DC : World Bank, c2010. ISBN: 9780821379875.

This report explores how public policy can change to better help people cope with new or worsened risks, how land and water management must adapt to better protect a threatened natural environment while feeding an expanding and more prosperous population, and how energy systems will need to be transformed.

More details:

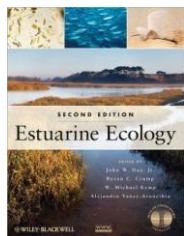
<http://web.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/EXTWDRS/0,,contentMDK:23079276~pagePK:478093~piPK:477627~theSitePK:477624,00.html>



Insect pests in tropical forestry by F. R. Wylie and M. R. Speight. 2nd ed. Cambridge, MA : CABI, c2012. ISBN: 9781845936358.

This book addresses forest insect pest problems across the world's tropics, addressing the pests' ecology, impact and possible approaches for their control. Fully updated, this second edition also includes discussions of new areas of interest including climate change, invasive species, forest health and plant clinics.

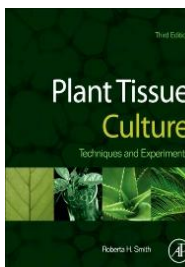
More details: <http://bookshop.cabi.org/?page=2633&pid=2327&site=191>



Estuarine ecology edited by J. D. Day, B. C. Crump, et al. 2nd ed. Hoboken, N.J. : Wiley-Blackwell, c2013. ISBN: 9780471755678.

This book covers the physical and chemical aspects of estuaries, the biology and ecology of key organisms, the flow of organic matter through estuaries, and human interactions, such as the environmental impact of fisheries on estuaries and the effects of global climate change on these important ecosystems.

More details: <http://onlinelibrary.wiley.com/book/10.1002/9781118412787>



Plant tissue culture : techniques and experiments by R. H. Smith. 3rd ed. Waltham, MA : Academic Press, c2013. ISBN: 9780124159204.

This edition builds on the classroom tested, audience proven manual that has guided users through the successful plant culturing of *A. tumefaciens*. The included experiments demonstrate major concepts and can be conducted with a variety of plant materials that are readily available throughout the year. This book is appropriate for both university students and plant scientists.

More details: <http://store.elsevier.com/Plant-Tissue-Culture/Roberta-Smith/isbn-9780124159204/>

Conference & Meeting Notices

- 1 – 3 July 2013 **SPC/UNISDR/SPREP – 19th Regional Disaster Managers Meeting**, Tanoa International Hotel, Nadi, Fiji.
URL: <http://www.pacificdisasterclimatemeeting2013.net/>
- 1 – 3 July 2013 **Pacific Regional Water and Sanitation Consultations**, Tanoa International Hotel, Nadi, Fiji.
URL: <http://www.pacificdisasterclimatemeeting2013.net/>
- 1 – 5 July 2013 **SPC/UNISDR/SPREP-Pacific Meteorological Council Meeting**, Novotel Hotel, Nadi, Fiji. URL: <http://www.pacificdisasterclimatemeeting2013.net/>
- 3 – 5 July 2013 **Pacific Climate Change Roundtable (PCCR) : Building Resilience to Climate Change through Collaboration**. Westin Denarau, Nadi, Fiji.
URL: <http://www.pacificdisasterclimatemeeting2013.net/>
- 8 – 11 July 2013 **Joint Meeting of the 2013 Pacific Platform for Disaster Risk Management & Pacific Climate Change**, Sofitel Fiji Resort and Spa, Denarau Island, Nadi, Fiji.
URL: <http://www.pacificdisasterclimatemeeting2013.net/>
- 23 – 25 July 2013 **SPC – High level Meeting on strengthening Inter-Island Shipping and Logistics in the Pacific Islands**, Suva, Fiji.
URL: <http://www.spc.int/en/meetings.html>
- 6 – 14 Aug. 2013 **Western and Central Pacific Fisheries Commission (WCPFC) – Scientific Committee 9th Regular Session**, Pohnpei, Federated States of Micronesia.
URL: <http://www.wcpfc.int/meetings/2013/9th-Regular-Session-Scientific-Committee>
- 2 – 5 Sept. 2013 **Western and Central Pacific Fisheries Commission (WCPFC) – 9th Regular Session of the Northern Committee**, Fukuoka, Japan.
URL: <http://www.wcpfc.int/meetings/2013/9th-Regular-Session-Northern-Committee>
- 26 Sept.-1 Oct 2013 **Western and Central Pacific Fisheries Commission (WCPFC) – 9th Regular Session of the Technical and Compliance Committee**, Pohnpei, Federated States of Micronesia. URL: <http://www.wcpfc.int/meetings/2013/9th-Regular-Session-Technical-and-Compliance-Committee>