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**Marine Studies and Aquaculture Training  
at the University of the South Pacific**

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## **Background and Introduction**

1. The University of the South Pacific has recently undergone a restructure process (see attachment) by reducing four faculties to three to reduce the operation cost and to make the University more cost effective.
2. The former Faculty of Islands and Oceans has been re-structured into a School now under the Faculty of Science, Technology and Environment (FSTE). The new School under the FSTE is known as the School of Islands and Oceans (SIO) which consists of four Divisions: Division of Marine Studies, Division of Geography, Division of Land Management and Division of Environment.
3. The Institute of Marine Resources (IMR) remains unchanged and is placed under the Division of Marine Studies.
4. This Information Paper briefly provides an explanation on the recent changes and current activities of the DMS.

## **Recent Re-structure**

5. The re-structure of the University became necessary following the existence of a budget deficit since 2006. In addition to changes in management and reduction of faculties, a moratorium has been placed on new courses except where commitments have been made.
6. Currently, new courses in areas of high priority may be allowed only if they are self-funding. Proposals need to go through a stringent evaluation and assessment process for approval if they are part of the academic programme.
7. There is a freeze on all appointments and all vacant positions are to revert to the level of Assistant Lecturer. Exceptional cases are to be dealt with thorough consultation by the Senior Management and Council.
8. The University through the directive from the Council hopes that the above measures are necessary in the interim to improve the financial situation of the University in the interest of the Regional Island Countries and the Donors.

## **Division of Marine Studies (DMS)**

9. The mission of the DMS remains the same as under its former structure: “to provide the necessary opportunities for Pacific Islanders to understand, conserve, develop, manage and utilize their living and non-living resources in a rapidly changing world, provide Pacific Islanders with the widest possible range of opportunities for research, education, training and employment in the marine sector, and provide for improved collaboration between the University of the South Pacific, island nations, regional and international bodies in their common goals in the marine sector”.
10. To achieve the above under the current climate places additional commitments and demands on the current staff. Prior to the re-structure, two staff positions were vacant (aquaculture and post-harvest fisheries) and so these came under scrutiny by the re-structure policy.
11. However, the University is aware of the high priority placed in these two technical areas in the Region. After much consultation, DMS position on Aquaculture was exempted and so the Aquaculture Expert position has now been filled at a Senior Lecturer level while negotiations are ongoing for hiring of a full-time position for Post Harvest Fisheries. Currently, this latter position has a part-time lecturer and a JICA Senior Volunteer Expert.

12. There has been no major disruption to the on-going training and academic teaching programme. From mid-last year, three former postgraduate students in aquaculture with extensive field experience together with a Senior JICA Volunteer Expert have provided the necessary back-up support to on-going activities in aquaculture.

13. The Sustainable Fisheries Programme which is a joint USP and SPC initiative was successfully launched last year. Two new courses under the Programme: MS112: Introduction to Sustainable Fisheries and MS207: Natural Resource Governance and Policy had encouraging student numbers – 68 and 26 respectively.

### **DMS degree courses in aquaculture**

14. DMS offers a 300-level course MS324 Aquaculture in Pacific Island Countries that introduces students to most aspects of tropical aquaculture. In 2008 there were several students, from Fiji Islands, Cook Islands, Marshall Islands, Tonga, Maldives and Solomon Islands. A 400-level project-based course MS425 Aquaculture is also offered, with about 3 – 6 candidates per year.

### **Institute of Marine Resources (IMR)**

15. IMR provides scientific and technical skills and capacity building in aquaculture, coral reef monitoring and coastal ecology. IMR operates independently and concentrates on working in applied research and consultancies on the region's marine and freshwater environments and its resources. The activities that IMR is involved in include aquaculture, coral reef research information and monitoring and marine turtle research and community based conservation, marine surveys, database maintenance and socio-economic surveys.

### **Short Courses and In-Service Training**

16. DMS in collaboration with IMR and International Oceans Institute (IOI) - Pacific Islands together with external collaborators also run short training programmes at the community level as well as for middle to senior level civil servants and managers. For example, SPC, CommSec, FAO, USP and the UNU/FTP programme on Fisheries Stock Assessment and Fisheries Policy and Planning and USP/DMS/IAS and NOAA's collaborative training on Management of Marine Protected Areas. Other projects include on-going joint activities with World Fish Centre, ACIAR, DPI Queensland, Fiji Fisheries and DMS/IMR on demonstrations of post-larval capture and culture using reef crest nets in areas of Fiji and training on Coral Reef Monitoring techniques.

### **Up-grading of regional aquaculture skills base**

17. The different aquaculture education, training and work attachment opportunities provided by DMS and IMR over the last 8 years (in collaboration with SPC) has built up an aquaculture skills base of regional alumni with skills in a range of aquacultured commodities. As an example, it has now become possible to establish sea-shrimp, freshwater prawn or tilapia fish hatcheries in Fiji or Solomon Islands using entirely local staff. This pool of trained regional personnel provides a base for alternative livelihoods and food security projects that can be utilised for wider coastal development and protection projects.

### **Proposed and Planned Activities**

18. Despite the budgetary constraints amidst expanding activities, DMS in collaboration with IMR, IOI- Pacific Islands other agencies will continue to consolidate and strengthen its teaching and training programmes so that it remains as the central provider of tertiary education in Marine Studies in the Pacific Islands region that is relevant to the region's needs.

19. DMS would like to work more closely with other sister regional agencies and island governments so that it can better meet their training needs. A number of initiatives (See Appendix) are on-going in this regard in areas of coastal fisheries management, sustainable fisheries, fish stock assessment and aquaculture with SPC. Training and research activities have also been on-going with FFA and SPREP.

20. USP through DMS would like to explore other innovative means for closer collaboration such as provision of supervisory support, student attachments, exchange of data and information, and use of facilities and joint research and training activities.

## **Appendix**

### **Some current staff and Post-graduate students research activities at the Division of Marine Studies, USP-Fiji**

1. Analysis of offshore tuna fisheries in Fiji and Tuvalu (provision of quarterly reports to FFA by Satalaka Petaia).
2. Investigations of early human settlements and environment in southwest Viti Levu Island Fiji (Johnson Seeto & Paddy Nunn- USP research project)
3. Chitons of Fiji; Marine invasive species survey of Samoa and Fiji; Fish parasites in Fiji, bivalves of Fiji and fishes of the Solomon Islands (Johnson Seeto)
4. Identification manual for South Pacific Zooplankton – with details on species distribution, community analysis, physiology and biodiversity (Edward Anderson)
5. Subsurface Chlorophyll Maximum in Fiji Waters (Edward Anderson & Dr Kazuya Urata of Saga University)
6. Marine Pollution Risk Assessment for the Pacific Island Region (Edward Anderson & SPREP collaborators)
7. Ballast Tank sediment Study in APEC region (Edward Anderson with Fisheries and Oceans, Canada and outside collaborators)
8. Excavating sponges from the USP region (Susan Pohler with C.L Schoenberg, AIMS, WA; B. Calcinai, Italy; Yushi Ise, Japan and others)
9. Beachrocks and conglomerate platforms in the USP region (Susan Pohler with J. Collen, VUW, NZ)
10. "Reef-building" polychaetes. (Susan Pohler with Julie Bailey-Brocks, Univ. Hawaii Manoa; E. Nishi, Yokohama, Japan).
11. Economics of Community-based Fisheries Management – Pacific Island case studies (Vina Ram-Bidesi)

### **Research Titles for masters Degree Students from the Division of Marine Studies at USP-Fiji**

1. Evaluating the effects of wastewater treatment initiatives on nutrients in coastal waters along the Coral Coast, southwest Viti levu, Fiji Island. Exsley Taloiburi.
2. \*Impact of harvest and post harvest processing methods on quality and value of beche-de-mer (BMD) in one or more Pacific Island Countries (PICs). Ravinesh Ram.
3. Distribution of Zooplankton and Fish Larvae in Laucala Bay. Arpana Pratap.
4. \*An assessment of Non-Market Economic Valuation Approaches to Coastal Resources at the Village level in the Pacific Islands: A case study of the villages on Muaivuso Peninsula, Rewa Province and Dromuna Peninsula, Tailevu Province, Fiji Islands. Peter Jacob.
5. Maritime transportation in the Pacific: an assessment of international, regional and national rules and practice. Avinta Goundar.

6. Productivity, profitability and Constraints in Tilapia and Fresh water Prawn Farms in Fiji, with emphasis on Farm types, farming practices, and choice of feeds. James Teri.
7. Assessing the reliability of indicators used by local communities in the monitoring of changes in MPA (marine protected area) and reef condition. A case study of the Korolevuiwai / Koronasavu I Qoliqoli, the Coral Coast. Ronald Simpson.
8. The impact of live rock harvest on seven fish families: (Chaetodontidae (butterfly fish), Blennidae (blennies), Godidae (gobies), Pomacanthidae (angel fishes) and Synodontidae (lizardfishes)) and substrate composition. Make Movono.
9. Assessment of the value and status of biodiversity in isolated atoll societies. A case study of Kiritimati atoll, Kiribati. Ane Teiaua Loran.
10. Antifouling strategies of Enteromorpha Species. Vipra Nandni Nand.
11. Marine Turtle Distribution and Nesting in Fiji. Neema Nand.
12. Application of statistics and GIS as tools to understand marine resources: A case study in Kubulau, Bua, vanua Levu, Fiji Islands. Naushad A Yakub.
13. The Ecological and Socio-Economic Importance of Soft shores in Viti Levu, Fiji. Sereana Liga.
14. Analyses of coastal changes on Tarawa using remote sensing technique. Naomi Biribo.
15. Identifying and analyzing coastal erosion “hotspots” in small Pacific Island countries via multi-temporal image analyses and coastal processes research. Prerna Chand.
16. Investigation of Alcyonarian spiculites as reef building agents and possible proxy climate archives. Zulfikar Begg.
17. \*The Impact of Cetacean depredation in the Pacific Islands Pelagic Longline Fishery. A case study of Fiji. Monte Depaune.
18. \*\*Recruitment patterns of mollusks in Savusavu Bay, Fiji with emphasis on the Blacklip pearl oyster, *Pinctada margaritifera* (Linnaeus, 1758). Marilyn Vilisoni.
19. Analysis of the implementation of Tuna Management Plan in Tonga: Case Stud, Tongatapu island. Eileen Fonua.
20. Spawning and larval rearing of the monkey river prawn *Macrobrachium lar* (Fabricius, 1798) (crustacean: decapoda: Caridea: Palaemonidae). Monal Lal
21. \*\*The Potential for *Pteria penguin* (Roding, 1798) Mabe Pearl Culture Techniques to increase the Participation by rural Coastal Communities in the Fiji Islands Pearl Aquaculture industry. Pranesh Kishore.
22. A study of the Relationship between wetland Ecosystem Services and Human well-being in the Coastal Village of the Kubulau Tikina in Vanua Levu, Fiji. Simita Singh.
23. Investigation of Alcyonarian spiculites as reef building agents and possible proxy climate archives. Zulfikar Begg.

24. Lapita Palaeogeography of the Rove Peninsula, southwest Viti Levu, Fiji Islands. Kirti Lal.
25. Valuation of Marine Protected Areas (MPAs) in Fiji. Tammy Tabe.
26. \*\*Post -release monitoring of hatchery produced juvenile sandfish *H. scabra* (Jaeger, 1833) (Echinodermata: Holothuroidea) in Fiji. Laisiasa Cavakiqali.

\* **Note: SPC Funded Projects.**

\*\* **Note: ACIAR Funded Projects (Not all USP-ACIAR students are reported on this 2008 list).**

# University of the South Pacific

