

APPENDIX 5

STAR CHAIR'S REPORT TO COUNCIL 2006

Chair of SOPAC, Excellencies, Distinguished National representatives and Delegation members, representatives of Institutions and Organisations, Ladies and Gentlemen.

I. Introduction

Thank you for this opportunity to formally report on STAR's activities and please accept my apologies for being unable to attend the rest of this Annual Session.

As you all know, STAR is the Science, Technology and Resources Network associated with SOPAC. It is an informal grouping of scientists that acts as an interface between the SOPAC Secretariat and its member nations and the international scientific community. STAR does this in several ways. At intervals, an international scientific workshop or meeting may be convened by STAR, or held under its auspices, on a broad theme relevant to the SOPAC region. STAR members also correspond and tender advice in the periods between the annual meetings. And picking up on a point made by the Deputy Prime Minister in his address this morning, I would like to stress here that STAR scientists are a resource available to you at any time, either directly from the relevant scientist or through myself as Chair.

More obviously, each year a meeting at which scientific papers are presented and discussed, and thematic Working Groups meet, is held prior to this Annual Session of the SOPAC Governing Council. This year, the 23rd meeting of STAR was held on September 20th to 22nd at this hotel and was attended by more than 100 scientists from around the world. STAR's 2nd meeting in 1985 was also held in Honiara.

II. STAR Presentations

As the Deputy Prime Minister and the Director of SOPAC explained in their opening addresses this morning, the main theme of this year's STAR meeting was: Natural Resources Governance, particularly with respect to minerals, energy, ocean and water, in the SOPAC region.

During the meeting, 48 scientific papers were presented orally and some 20 others by the

posters displaying research results, some of which you see displayed around this room. Abstracts of these are published in *SOPAC Miscellaneous Report 621*. As is always the case for STAR meetings, the information presented covered a broad range and I recommend the volume of abstracts as a guide to the material covered and as a source of much useful information.

Let me very briefly outline the scope of the presentations for you, and this is simply to indicate the variety. Several papers directly developed the major theme of the conference, dealing with issues such as the meaning of natural resource governance to Pacific peoples and the ways governance occurs in several states. Another seven papers were concerned with resource management. Hazards and risk reduction presentations included both planning and management discussions and specific hazards such as tsunamis.

Oceans papers dealt with a variety of oceanographic observations and oceanographic activities in the region, and were the subject of an associated meeting. Ten papers dealt with aspects of water in the region, and two with issues of energy use. As is appropriate for a meeting held in Honiara, the minerals and geology sessions heard about mining and metallic mineral occurrence in the Solomon Islands and in the seas of the region, including deep water exploration and mining for seafloor massive sulphide deposits. Other papers in these sessions covered the plate tectonic geology of the area and the geology of Savo Volcano, visible from this hotel. Sedimentary geology papers examined processes of erosion and sedimentation, and techniques for assessing coastal change and demonstrating its effects to affected residents.

The final session learned about the proposed PacSciNet scientific database and discussed the needs of the region with respect to such a database, which it is hoped will be operating in pilot form next year.

The STAR Meeting concluded on Friday evening with a special talk from Dr David Pugh, president of the Intergovernmental Oceanographic Commission, on the general theme "Marine science and ocean governance" which, amongst other things, explored the relationship

between politicians and scientists in dealing with the marine environment – something that is central to these STAR/SOPAC meetings.

Associated with the STAR Meeting were meetings of the PI-GOOS Steering Committee (convened by Bill Erb, IOC and Mary Power, SOPAC) and the Intergovernmental Coordination Group of the Pacific Tsunami Warning System (convened by Ken Gledhill, GNS Science).

III. Working Groups

In addition to the scientific presentations, a number of working groups also met. These working groups offer an important opportunity for STAR delegates to bring to the attention of Council items of particular scientific and technical importance to the region.

This year, 8 working groups met to discuss:

Aggregates,
Economics and policy analysis,
Energy,
Information transfer,
Marine benthic habitats,
Ocean observation,
Tsunami, and
Water.

I will not report on their deliberations here but the full documents with supporting arguments for the conclusions will be appended to this report and I commend these for your perusal. I would simply like to point out at this time that the Information Transfer and the Economics and Policy Analysis working groups represent a rather new development in STAR working groups, indicating increasing emphasis on research being communicated to end-users and integrated with other disciplines.

V. Other Events from the STAR Meeting

Last year saw the introduction of the Programme Monitoring and Evaluation Groups. These groups of TAG scientists again met with SOPAC Programme Managers in Suva immediately prior to this STAR meeting. They gave their impressions of the process to the STAR meeting, and will report more fully to Council later in the meeting.

Two field excursions were organised on Saturday for STAR delegates by Mines Department staff. These were to Savo Volcano out in the Sound

and to the Gold Ridge gold mine on Guadalcanal. They gave delegates an opportunity to see some of the geology of this area – one of the most complex and fascinating of anywhere – and those of us who took advantage of this are most appreciative of the efforts of the organisers. The visits were enhanced by the talks in STAR sessions that dealt with the details of both locations.

This year we attempted to put into practice something we have discussed for a number of years, namely using the opportunity provided by these meetings to have STAR scientists visit schools and community groups to talk about earth science ideas and issues. A number of delegates were able to talk at several secondary schools, and reported it as a most rewarding experience. We were not able to utilise as many volunteers as we had hoped, mainly because of difficulties in scheduling talks at very short notice – this was necessary because delegates did not know when they would be available until after they had arrived in Honiara and organised their programmes. However, the exercise has given us an idea of the difficulties involved and we are hopeful of being able to improve it at later meetings.

VI. General Comments from Chair of STAR

At this point, I would appreciate the opportunity to convey some personal impressions of this STAR meeting.

As I have stated several times before, a clearly applied direction to research has always been a particular feature of STAR and delegates frequently discuss mechanisms for increasing the provision of quality technical advice to member governments throughout the year, not just at these meetings. STAR scientists are a resource that is available to SOPAC member nations and we actively seek ways to ensure that optimal use is made of this resource. The Information Transfer Working Group, for example, discussed ways of reformatting scientific information to make it more accessible to the whole range of end-users and has suggested using the the forthcoming Marine Benthic Habitats Conference in Noumea and next year's Annual Session as a trial for these.

A second point relates to the integration of science with other disciplines. This year continued a trend of more active involvement of economic issues into the discussion of the results of scientific programmes, and that

extended to the convening of a STAR Working Group.

Finally, this year about half of the STAR presentations were from scientists based within the SOPAC region and many others dealt with collaborative research between people within and without the region. At the STAR meetings we continue to see genuinely global research with a strong Pacific base.

As usual, STAR is indebted to staff of the SOPAC Secretariat for their cheerful and untiring efforts that make the meeting possible. Thanks too to my colleagues for their presentations, chairing sessions, visiting schools and, in advance, contributions to the TAG sessions.

And, Mr Chairman, as Chair of STAR and speaking on behalf of all the scientists, may I thank our hosts, the Government and people of the Solomon Islands, for your welcome and hospitality. Donn Tolia and Cromwell Qopoto from Mines and Energy are the two persons I have mostly dealt with and I am grateful for their hard work, but I know that there will be many others who have had a busy few weeks, and we all thank them sincerely.

That concludes my address. Thank you.

John Collen (Chair, Science Technology and Resources Network (STAR))

ATTACHMENT

MINUTES OF STAR WORKING GROUPS

1. Aggregates Working Group

Preamble

The availability, quality and modes of supply of aggregate (sand and gravel) resources across the Pacific region varies depending on the physical, social and development characteristics of each island setting. Generally, high islands have better resource potential (quality and quantity) than low atoll environments and urban, fast developing centres have greater demands, in terms of both quality and quantity, than rural villages. In recent years a number of urban centres have undergone rapid increases in size and population and the steadily increasing need for more infrastructure, departure from local (traditional) building styles and increased numbers of motor vehicles has combined to place great pressure on aggregate resources.

Unfortunately, a coincident change in approaches to aggregate supply has been lacking and even in some heavily populated centres aggregates are still seen as a “free” resource to be collected and used at will. Such an approach is no longer appropriate in these urban environments and not only are aggregates in short supply and of variable quality, but ad hoc, uncontrolled aggregate extraction is in many cases leading to significant environmental degradation. This is particularly true of atoll and other small islands where terrestrial aggregate sources are extremely scarce. It has also been found that even in circumstances where aggregate supply may be adequate, the industry is often poorly monitored and regulated and little is known regarding local demand volumes, resource potential or quality or the environmental consequences of extraction.

The need for alternative, well regulated aggregate resources is reaching crisis point in some locations. Over the last 3 years SOPAC through the EU-funded “Reducing Vulnerability Project” has been working hard to develop a more holistic approach to this issue. SOPAC has also been, and remains active in identifying and assessing alternative aggregate resources. More recently, it has also produced aggregate resource frameworks and guidelines to better develop these alternatives and existing resources. Additionally, improved methods of environmental monitoring have been introduced and work has also been conducted estimating aggregate demand and cost benefit analysis regarding the development of alternative sources. Capacity building of local professionals is also considered an essential component of the framework for sustainable aggregate resource development and has been ongoing.

Previous Recommendations

The last two aggregates related working groups were convened during the STAR meetings of 2000 and 2001. Both these working groups deliberated on the theme “Coastal and Nearshore Processes”. Some of the recommendations were:

2000 Working Group

In nearshore aggregates research the Coastal and Nearshore Working Group recommended that:

1. that the ongoing assessment of nearshore aggregate resources and consumption in

member countries and post-extraction monitoring processes continue. Prior to new “large” construction projects being approved, aggregate needs should be assessed and sources identified; approval of such projects be assessed within the framework of factors.

2. the identification of alternative and environmentally less-destructive aggregate sources be pursued. These might include suction dredging of deeper water deposits in lagoon and/or fore reef areas.
3. In coastal research, the collection of beach profile data and the SOPAC training programs continue and be expanded to the extent that resources will permit.

2001 Working Group

The Working Group recommended:

1. exploration and identification of sand and aggregate resources to be continued.
2. identified alternative aggregate and sand resources be developed.
3. technologies for utilisation of offshore deposits to be considered for adoption.
4. project documents and tender documents should consider the source and quantities of aggregate and sand.
5. software and hardware related to multi-beam, sidescan and remote sensing continue to be acquired to maintain a cutting edge and to make data processing efficient.
6. research related to sediment supply, movement and loss in nearshore regimes in islands be prioritised.
7. environmental assessment be emphasised as an essential and beneficial tool for developers and society, particularly in small island nations.
8. beach profiling training be expanded to include the use and interpretation of data.
9. reclamation of suitable large areas be explored to enhance engineered living areas.
10. response actions be developed, disseminated and practised for vessels grounded in nearshore environments.
11. research programs be developed to support integrative multi-disciplinary approaches towards aggregate supply, habitat characterisation and use of lagoon systems.

2006 Aggregates Workshop

An aggregates workshop “Aggregate Resources of Coastal and Marine System” was held in Suva – Fiji, in January 2006 and was attended by representatives from a number of countries in the region. The workshop recommended the following:

1. that each country should work towards regulating all aggregate extraction processes through sound legislation, guidelines and community outreach programs. Continued improvement of technical capacity and resource owner negotiation will in turn assist with issues such as EIA, codes of conduct, land access rights, etc.
2. The need for Public Outreach and Education programs came out strongly during the workshop. Beach mining at a household level can only be addressed if the public is sympathetic to the problems this practice causes to the stability and resilience of the coastline. Additionally, a well informed community becomes self policing, in that local landowners will not allow damaging practices to continue on their land or coastal zones, if they understand the long term negative consequences.
3. SOPAC is urged to continue to involve PICs nationals in future marine surveys to empower relevant technical people in each country. In addition, further assistance is required on the processing of bathymetry data and in interpreting submarine features on bathymetry maps.
4. Assistance is required to make available basic sedimentary and geo-technical equipment to all PICs thus enabling essential tests to be carried out locally and affordably.
5. Regional need to put in place systems whereby sand and gravel consumption is effectively monitored. This will greatly assist in resource development and management, and the forecasting of future demands. Such data will also greatly assist to rationalise pricing of this resource.
6. Assistance to identify, assess and develop appropriate, more sustainable aggregate resources and undertake feasibility studies prior to resource development.
7. Ensure that the aggregate materials used are adequate in terms of quality - aggregate assessment prior to resource development. Geo-technical testing to ensure aggregates meet specification requirements.
8. Follow up workshop recommended to “improve the understanding of the quality

of aggregates resources that occur and are currently being used in PICs". This is envisaged as an effective way for laboratory technicians and engineers to share and discuss their experiences with their colleagues from around the region. A regional collaborative framework, data sharing and the establishment of a regional geo-materials laboratory shall be initiated and discussed.

STAR 2006 Aggregates Working Group

Major themes highlighted during discussions.

1. Smaller high islands often have adequate potential hard rock resources but are unable to develop viable commercial quarries due to low and fluctuating demand (often project driven). Can SOPAC assist to develop better models for small scale quarry operation in these environments?
2. Develop capacity to undertake realistic feasibility studies and EIA before quarries are established.
3. Community awareness of the ills of ad hoc aggregate mining (beach, intertidal flat, rivers) throughout the region is poor and these processes are not understood. It is broadly agreed that this must be addressed in order to prevent and protect coastal and other systems.
4. Would like the production of "best practise" generic aggregate extraction guidelines (terrestrial, lagoon, river, intertidal flat) which can be used throughout the region.
5. Develop capacity to monitor coasts and rivers using RS techniques.
6. Promote the recycling waste building material in larger centres.
7. Broad agreement that the scarcity of demand volumes and records greatly hampers aggregate development throughout the region – continued assistance to regulate extraction operations.
8. Need for continued exploration, identification and assessment of new resources – forward planning and quarry establishment will prevent ad hoc mining.
9. Land/resource ownership issues seen as one of the biggest obstacles to successful aggregate development.
10. Much attention is given to large urban centres – however there is a need to establish appropriate aggregate extraction /supply practises in smaller rural locations to prevent environmental degradation.

11. Investigate the potential of sub-regional supplies i.e. the Nauru, RMI, TV, KI proposal. Additionally, islands in FSM have the potential to supply high quality aggregate sub-regionally – feasibility studies (note possible links to point 1).
12. Continued assistance to strengthen aggregate resource management, policy and legislation.

Participants – Aggregate Working Group 23rd September 2006.

Mike Petterson, BGS – UK, mgp@bgs.ac.uk
 Thomas Toba, DME – Solomon Islands, t.toba@mines.gov.sb
 Nathan Mosusu, GSPNG – PNG, nathan_mosusu@mineral.gov.pg
 Joseph Ishmael, DME – Solomon Islands, i.joseph@mines.gov.sb
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 Arthur Webb, SOPAC, arthur@sopac.org

2. Economics and Policy Analysis Working Group

(Report compiled by Padma Lal, PIFS and Paula Holland, SOPAC)

A group of STAR participants met to discuss the following:

- if there is a need to form a Economics and Policy Analysis Working Group?
- if so, then what form should it take – a loose network of people or a formal structure? and what should its objectives be?

Report

After some discussion, the group agreed on the following:

- to form a loose network of people interested in policy advice underpinned by economics and policy analysis
- this loose network would:
 - o exchange of ideas and
 - o promote/champion economics and policy analysis based policy advice in key thematic areas

- o to undertake or help undertake specific resource and environment related economic and policy analysis projects in 2007 and
- o to organise a session at the 2007 STAR to discuss the outputs/ outcomes of these projects to highlight the relevance of policy advice based on economics and policy analysis. Two specific thematic areas were identified – energy and water – where economic component could be incorporated in the design of the projects (in progress) or added to existing program of technical work in progress.
- to make a recommendation to other STAR working groups to also ‘explicitly consider economic analysis dimension of respective proposals designed to provide appropriate policy advice, reflecting the three pillars of sustainable development.

3. Energy Working Group

Working Group Members:

Marion Henry (FSM), Ausetalia Titimaea (Samoa), John Korinihona (Solomon Islands), Nixon Kua, Solomon Islands, Andrew Dakar (SIEA, Solomon Islands), Gordon Chang (PPA), Padma Narsey-Lal (PIFS), Paul Fairbairn (SOPAC), Anare Matakiviti (SOPAC), Jan Cloin (SOPAC), Rupeni Mario (SOPAC).

Apologies: No apologies were received or tendered.

Facilitator: John Korinihona, Director of Energy, Solomon Islands

Rapporteur: Nixon Kua, Energy Department, Solomon Islands

Paul Fairbairn, Manager Community Lifelines Programme, SOPAC

Working Group Report & Recommendations:

The members of the STAR working group on energy agreed that the following recommendations should be submitted to the SOPAC Governing Council for the benefit of the Community Lifelines Programme (CLP) and individual Member Countries. In making this report it is noted that a number of recommendations from 2005 still remain relevant and continue to be advanced.

More specifically it was noted that:

- a. The Pacific Islands Energy Policy (PIEP) had been included in the Pacific Plan as a regional priority for “immediate implementation” in the period 2006-2008, and that the key components of the PIEP are currently being implemented in accordance with the overall programme of activities as elaborated in the companion Pacific Islands Energy Strategic Action Plan (PIESAP) to the PIEP. It was further recommended that there was the need for Energy to be considered as a “development issue”, and that Energy should be included as an integral component of all PIC National Development Plans.
- b. The option and potential benefits from the bulk purchase of petroleum supplies were currently being considered, including consideration of this option from an economic perspective. It was highlighted that in regard to bulk purchasing options that there was a workshop planned for SIDS in early October 2006 by the PIFS.
- c. The lack of affordable, reliable and clean supplies of energy continues to threaten the existence of Pacific island communities and efforts must therefore continue to address this issue and contribute alleviating this situation, in particular, in regard to rural and remote communities.

The Working Group on Energy:

- (1) Noted the following key issues and opportunities:
 - i. The submission by SOPAC of a proposal for a second phase of the PIEPSAP Project for funding through the ACP-EU Energy Facility and that support was also being provided to a number of PICs in the preparation of National submissions. The dead line for receipt of submissions being 6th October and a very tight time frame.
 - ii. The submission of a concept paper on Energy for inclusion in the EDF10 regional submission.
 - iii. The endorsement of the proposal to convene a Regional Energy Official meeting (REM2006) and an Energy Ministers Meeting (EMM 2006) in late 2006 by the CROP Heads where the focus of the meetings would be “Energy Security for Development”. PIFS to coordinate the Ministerial meeting with SOPAC coordinating the Energy Officials meet-

ing and actively contributing towards the preparation of papers for both the REM2006 and EMM2006.

- iv. The mid-term review of the Pacific Islands Energy Policy and Strategic Action Planning (PIEPSAP) Project recommended the extension of the project for a further 12 months within the existing project funding allocation. The PIEPSAP project continues to assist the PICs with the development and implementation of their energy policies and work plans. It was noted that PICs are at different stages with their policy development and implementation and a flexible approach needs to be adopted to ensure that the individual PIC energy sector development requirements and priorities are met.
 - v. The confirmation from the UN-GEF that the Pacific Islands Greenhouse Gas Abatement through Renewable Energy Programme (PIGGAREP) has now been funded and that SPREP are the executing agency for this programme. Details of the execution arrangements still remain to be established and will undoubtedly involve other key organisations involved in the delivery of regional energy programmes and activities.
 - vi. The inputs by SOPAC to the CSD14 through the CROP EWG where the thematic group included “energy for sustainable development” were noted and agreed that similar levels of support should be maintained for CSD15 in 2007.
- (2) We acknowledge the positive contribution made to promoting energy sector issues through visiting three schools where presentations were made that provided information on renewable energy, energy efficiency and the new energy technologies, and recommend that this educational informational exchange be incorporated as a regular activity into future STAR programmes where schools and technical institutes can directly benefit.
 - (3) We note the progress made with regard to biofuel sector development in a number of countries, specifically focused on a) the feasibility of production of biofuel from oil on outer islands, combined with local value adding for products such as soap, body, cooking oil and b) the feasibility of biofuel for power generation, c) the technical requirements for biofuel in the transport sector. It was recognised that mainstreaming of biofuel in the fuel markets of the Pacific islands requires quality control and standardisation. It was further noted that continued Government support through tax incentives, investment promotion or public private partnerships is essential for the sustainable establishment of a viable biofuels industry, contributing to the environment, improving balance of payments, creating jobs, decreasing foreign oil dependence and supporting local agriculture.
 - (4) We support the concept that economic analysis and evaluation (including social) should be utilised as a tool, and become an integral component of project and programme development phases. That the idea of establishing a STAR economics working group be further considered in 2007 where in the intervening period key projects in the energy and water sector are subject to economic evaluation or analysis as applicable is included. Further more that during this transitional period we support the post economic evaluation of projects and programmes as means of contributing to the lessons and strengthen future project design.
 - (5) We understand that energy has a major impact on all the four pillars, namely, economic development, security, sustainable development and governance, however in general there appears to be limited attention paid to the human resource component where community involvement and the resilience of communities needs to be considered in more detail in regard to energy sector programmes.
 - (6) We applaud the considerable effort and progress that has been made to date in the integration of the energy and gender aspects into the energy component of the Community Lifelines Programme where this has been acknowledged at the national, regional and international levels.
 - (7) We acknowledge the work to date in the areas of renewable energy, biofuels and energy efficiency and reaffirm the need for work to continue in these areas where particular emphasis given to the continued exchange of information and the implementation of projects at the national level.
 - (8) We note the integration of energy sector focused presentations into the STAR Sessions and encourage the SOPAC Secretariat and the CROP Energy Working Group to work towards the identification of a sub-theme

for 2007 within the overall STAR theme which should be the basis for inviting and encouraging presenters to participate in the 2007 STAR Session to strengthen the energy sector component.

- (9) We support the endorsement of the proposal to convene a Regional Energy Official meeting (REM2006) and an Energy Ministers Meeting (EMM 2006) in late 2006, where the focus of the meetings would be on “Energy Security for Development” and encourage the PIFS and SOPAC to assume their respective roles in coordinating and the preparation of the technical presentations for the Energy Ministers and Energy Officials Meetings. We note that aside from the potential benefits in these meetings assisting in mainstreaming energy into national agendas it will also provide the opportunity to provide New York Missions with high level ministerial statements for presentation at the CSD15 in 2007.

4. Information Transfer Working Group

There has been concern amongst Pacific scientists for some time that, despite their best efforts at communicating their results, scientific information is not necessarily getting to the right people in the right format. Unless information transfer occurs, the full benefits of the science may not be realised and sustainable development may be hindered. This problem is not restricted to the Pacific region, of course, nor to scientific information; nonetheless, STAR delegates believe it is important and timely to attempt to better serve the interests of local communities, the progress of research, and sustainable development in the region.

The Information Transfer Working Group discussed situations within the region where better flow of information might assist decision-makers, and heard about initiatives dealing with this issue elsewhere. An example of a well-resourced communications strategy is that in the U.S. federally- and state-funded SeaGrant Programme. Here, a pre-condition for each research grant is that a cogent plan for communicating science to the wider community is included in the budget. This may equal the amount spent on the practical scientific research. In New Zealand, the Hazards Group of GNS Science spends about one-eighth of its research budget communicating its work. The Working Group thus feels it should stress that lack of a properly-resourced communications strategy for SOPAC will put at risk the desired outcome of getting scientific information that is readily understood into

the hands of decision-makers at all levels in the region. This is in accord with Chapter 80 of the Mauritius Strategy, 2005 (Knowledge management and information for decision-making) which specifically addresses the action required by small island developing states, with the necessary support of the international community, for identifying and addressing gaps in data and the characterisation of information.

The Working Group recommends that, although there has to be a long-term commitment, a pilot project be undertaken during the coming year to demonstrate how improvements in information transfer can be achieved. The Tonga representative suggested that a site in Tonga be used as it was to host the next Council Meeting and this would provide an opportunity to demonstrate delivery of appropriate outcomes. The Working Group also considered that the swath-mapping dataset for Tongatapu would provide a good existing piece of science to use.

The Working Group further noted that the forthcoming Benthic Habitats Workshop in Noumea would provide an opportunity partway through the next year to review progress.

The Working Group therefore recommends that Council:

- Recognises the importance of communicating science in appropriate forms throughout the wider Pacific community and urges the Secretariat, in conjunction with other CROP institutions and with STAR, to complete a comprehensive Communication Strategy in the coming year; and
- Ensure that the review team developing this policy includes a science communicator with experience of developing-nation needs.

Participants:

Brian Scott (Forum Fisheries Agency, Honiara)

David Garton (Georgia Institute of Technology, USA)

Doug Ramsay (NIWA, New Zealand)

John Collen (Co-convenor, Victoria University of Wellington)

Jovilisi Suveinakama (Senior Legal Officer, Tokelau)

Kelepi Mafi (Ministry of Lands, Survey & Natural Resources, Tonga)

Lala Bukarau (SOPAC Secretariat)

Litea Biukoto (SOPAC Secretariat)
Phil Glasby (GNS Science, New Zealand)
Russell Howorth (Co-convenor, Matadrevula
Advisory Services)

5. Marine Benthic Habitats Working Group

The habitat working group convened during the STAR meeting that preceded the 35th Annual Session of the SOPAC Governing Council, 21 September 2006 in the Solomon Islands. The meeting, Chaired by Gary Greene of Moss Landing Marine Labs, USA, was attended by Yves Lafoy of New Caledonia, Sonja Miller of New Zealand, Arthur Webb and Mary Power of SOPAC and Alan Butler of CSIRO, Australia.

Two major agenda items were discussed and included 1) future marine benthic habitat related work of the SOPAC Secretariat and 2) identification of themes for the 8th GeoHab meeting in New Caledonia that will be hosted by the New Caledonian Government and convened by Government of New Caledonia and SOPAC and CPC and possibly co-sponsored by NIWA and GNS Science of New Zealand, IOC, and possibly by CSIRO of Australia. Results of these discussions are presented below:

1) Habitat Mapping

In regard to the future marine benthic habitat work of the SOPAC Secretariat, the working group felt that SOPAC was probably the only CROP organisation that presently has the capacity to undertake comprehensive seafloor mapping efforts to support habitat characterisation. SOPAC's abilities to field sophisticated acoustical instruments that can image the seafloor in detail and their capacity to use remotely sensed data to assess habitat potential in coastal and shallow waters makes it a lead regional organisation to map habitats.

However, for SOPAC to undertake a habitat mapping effort they would need to expand their data acquisition and processing capabilities, increase the ecological, physical and chemical components, and interface with other regional organisations that have an interest in habitat characterisation. The Working Group noted that many STAR and TAG representatives have the capacity and desire to assist SOPAC in this effort and the Working Group suggested that a pilot project be selected somewhere in the region to demonstrate the tremendous potential and benefits of such a program.

The Working Group further noted that with just a little more attention to such things as collecting multibeam backscatter data for the purpose of textural analyses, the same data sets presently produced for resources assessment can be used for habitat characterisation purposes. In fact, the data sets once processed, interpreted and placed in a GIS can be used to produce a series of thematic maps beneficial to the region including geohazards, resources, hydrographic and other geologic and bathymetric maps.

In addition, the Working Group noted that data management and distribution needs should be a serious component of the Habitat program. SOPAC would be a logical facility to track, manage and distribute data to the region.

2) GeoHab 2007 New Caledonian Conference

Participants at the Working Group meeting were informed of the upcoming GeoHab Conference to take place in New Caledonia 2-6 May 2007 and the role the SOPAC will play in the organisation and sponsor of this Conference. Yves Lafoy is the Chair of the Conference and is presently organising the venue, agenda, and in country logistics.

The Working Group noted that, if Council approves of furthering the efforts of SOPAC to characterise habitats, the GeoHab Conference would provide an excellent opportunity for the SOPAC Habitat Working Group to convene a program planning meeting. By including other regional and international experts that will be attending the GeoHab Conference, SOPAC will have an opportunity to structure a habitat program that is forward looking and based on the best knowledge in the field today.

The Working Group discussed what thematic themes should be included at the GeoHab Conference and produced the following list:

- *Technology and Data Processing* – includes both acoustical and optical, deep-water and shallow-water, and geophysical and biological instrumentation.
- *Mapping Techniques and Classification Schemes* – includes methodologies in characterising marine benthic habitats, auto-classification techniques, both supervised and unsupervised, and case histories, including other thematic mapping efforts, that identify surrogates or proxies for habitats and biological communities.
- *Management and Policy* – the science-management link.

- *Coral Reefs and Ecology* – deals with the regional problems of coral reefs and lagoons and the latest techniques in habitat characterisations.
- *The Time Dimension* – deals with pressures that cause habitat change and should include such things as water quality as an ecological maintenance parameter, physical, chemical and biological processes, and monitoring.
- GOOS – Pacific monitoring studies
- Multi-purpose Activities

From the Working Group discussions three recommendations to Council were formulated and are described below:

Recommendation 1 – in acknowledging the marine benthic habitat mapping skills of the SOPAC Secretariat, and noting the increasing regional interest and demand for habitat characterisation, the Working Group recommends that Council supports an effort for SOPAC to embark upon a habitat mapping program that would require expansion of data collection and processing capabilities, increasing the ecological component, and cooperating with other CROP organisations that have an interest in habitats.

Recommendation 2 – in noting the increasing Pacific wide interest and advancement of marine benthic habitat mapping by such organisations as NIWA, GNS Science, CSIRO, GeoScience Australia and others, the Working Group recommends that the Council encourage Member Countries and TAG organisations and experts to participate in a SOPAC led habitat characterisation program and assist in developing a demonstration project.

Recommendation 3 – in noting the upcoming New Caledonia GeoHab Conference that will attract habitat mapping experts from around the world, and based on the approval of Council for SOPAC to develop a Habitat program, the Working Group recommends that a SOPAC habitat program planning meeting be held in conjunction with the GeoHab 2007 Conference.

6. Ocean Observation Working Group

Participants:

- D. Roemmich (SIO, USA)
- L. Gourdeau (IRD, New Caledonia)
- W. Kessler (PMEL/NOAA, USA)
- K. Mizuno (JAMSTEC, Japan)

- S. Piotrowicz (NOAA, USA)
- B. Erb (IOC)
- M. Johnston (Nautilus Mineral, Australia)
- A. Simpson (ASAP, Australia/Fiji)
- K. Kalim (DEC, PNG)
- M. Nidung (Coordinator Marine Boundary Project, PNG)
- M. Power (SOPAC)
- J. Potemra (IPRC/U. Hawaii, USA)
- K. Kitazawa (JAMSTEC, Japan).

Summary:

At the STAR plenary session, four papers were resented. The current status of global and regional ocean observation through Argo project was reported. The project measures temperature, salinity, and ocean current in the upper 2000 meters of the global oceans with autonomous profiling floats and reports every ten days. Over 2500 floats have already been deployed over all oceans, out of them 550 were in the South Pacific. The Argo Project provides basic information on the role of oceans in storage and transport of heat and freshwater for the better understanding of the climate system. The project reveals the seasonal-to-interannual variability in the ocean due to atmosphere/ocean climate phenomena such as El Niño. Argo data are publicly available within about 24 hours of collection.

A new project (SPICE: Southwest Pacific Circulation and Climate Experiment) to measure regional and coastal current in the Southwest Pacific Ocean was proposed. The project aims to provide a complete description of the mean and variable circulation in the region and its influence to the climate system through targeted observations together with global observing systems such as Argo, and modeling analysis. SPICE has taken its first steps by using new instrumentation to measure the flow of the South Equatorial Current revealing its jet-like structure near islands. An Australian initiative (BLUElink system) to deliver a short range ocean forecasting system for the Asia-Australian region was introduced. The system intends to combine observational products of satellite observations and in-situ ocean observation and other measurement platforms with a global ocean circulation model, and to improve understandings the state of the ocean and prediction of various ocean phenomena in the region such as the Indonesian Throughflow, the Coral Sea Gyre, and the East Australian Current. The recent development of the Pacific Island GOOS (PI-

GOOS) was also briefly reported. (This item would be reported under a separate Agenda item.)

Findings and Recommendations:

The WG reaffirmed that results of ocean observations are fundamental to improve our understanding on the state of oceans not only for scientific research but also contribute to development of human community through various forms such as weather forecasting, predicting ocean current variations which would be benefit to fisheries industry, ocean transportation, tourism. It recognised that ocean observations in the SOPAC region are being smoothly implemented with strong assistance from SOPAC Member Countries and appreciated their cooperation.

The WG recommends that SOPAC Member Countries to continue cooperation with implementing organisations of ocean observations enabling them to effectively carry out observations, and to communicate Countries' needs regarding to documentation attached to data enabling them to provide adequate ocean information to Member Countries.

The WG felt it necessary to improve ways and means in transmitting products of ocean observations with appropriate documentation to the region. The WG discussed the importance of engaging the user community to define better what products and services they require, and noted that a first attempt was made at the Regional Workshop of Potential Applications for Ocean Observations in the Pacific Island Region (PAOOP) in Fiji (2002). It believed that a follow-up workshop in 2007/8 would be advisable to update user requirements, facilitate communication with research and operational oceanography communities, demonstrate the latest products and services available, and at the same time the proposed workshop could generate actions regarding to implementation of GOOS in the region.

The WG recommended to STAR that the next session of STAR endorse the theme on "Ocean and Coastal Research and their Applications in the SOPAC region" which would specify and encourage desirable ongoing and future research projects in the region, data and potential appreciations. It also recommended that the theme should identify user needs as perceived by Pacific Islands would be particularly encouraged to contribute papers addressing research activities.

The WG recognised that the capability to transmit interpretive products to users and the transmission of observations to both local users and assimilation activities that, in turn, develop products is a critical element of infrastructure for the end-to-end ocean observing system. The systems have to be robust, reliable, accessible at all levels, integrated with the global information infrastructure, and cost-effective. The Information System (WIS) of the World Meteorological Organisation (WMO) is being developed to address these issues. It felt that integration with the WIS provides access to the data and product systems of the WMO and to the Global Earth Observing System of Systems (GEOSS) is essential.

The WG recommended that SOPAC should interact with WMO Region V on the development of the WIS in support of the information requirements of the region, and each national ocean observing program (those transmitting and disseminating data) and users receiving ocean observations and products should interact with their National Meteorological Services to implement the WIS.

7. Tsunami Working Group

A group of interested STAR participants met and discussed on technical issues in relation to Tsunamis. The discussions are in line with the Framework for Action 2005-2015 and theme 5 of this Framework and took into account and built further on the "draft strategy for enhancing early warning for Pacific Island Countries" and the "Strategic recommendations for addressing tsunami risks, South Pacific Tsunami Awareness workshop at the Forum Secretariat, Suva, Fiji, 1-3 July 2004".

The group discussed and agreed on the following recommendations for consideration:

SOPAC to be advised that PTWS working group are to take a number of recommendations to PTWS that have implications for member countries and that SOPAC take a coordinating role.

SOPAC to facilitate and support the initiatives of the PTWS group to carry out an initial survey of existing instrumentation for gap analysis and system design.

8. Water Working Group

The STAR Water Working Group (WWG) met as an integral part of the 2nd Steering Committee

Meeting of the Pacific Partnership Initiative on Sustainable Water Management on 22 September 2006. Members present came from the Cook Islands, Fiji Islands, Federated States of Micronesia, Kiribati, Marshall Islands, Niue, Papua New Guinea, Samoa, Solomon Islands, Tonga, Vanuatu, Australia and New Zealand.

Preamble

The STAR WWG concluded that:

1. Sustainable water management in Pacific Small Island Countries (PSIC) embodies some of the most complex and challenging problems in water management in the world.
2. Rates of deaths and illnesses due to water-borne diseases in Pacific SIC are unacceptably high and have major social and economic costs.
3. Economic development is underpinned by the water sector and unreliable and unsafe water supplies reduce the potential for development opportunities.
4. Solutions to these problems lie not just in the economic and technical realms, but involve fundamental behavioural change.
5. Behavioural change requires long time frames (of order 10 years) and sustained engagement.
6. Donor and SOPAC water and sanitation programs tend to be short term with rapid staff turn-over. SOPAC does not have a core-funded position in the water and sanitation sector.
7. The Pacific Plan and many national development strategies and plans do not emphasise the fundamental importance of water and sanitation.
8. The Pacific Regional Action Plan on Sustainable Water Management in contrast provides a key framework for addressing water and sanitation problems in Pacific SIC.

9. The Pacific Partnership Initiative for Sustainable Water Management (PPISWM) plays a valuable role in building capacity to manage water and sanitation in Pacific SIC. The Coordination Unit currently housed in SOPAC is critical to the success of the PPISWM.
10. Funding for the PPISWM Coordination Unit expired in June 2006.

Recommendations

The STAR WWG recommends unanimously that Council:

1. Advocate specific inclusion of water and sanitation in the Pacific Plan as a key strategic sector and specify that the Pacific Plan be consistent with the Pacific Regional Action Plan on Sustainable Water Management.
2. Encourage all member states to promote the importance of integrated water and sanitation management in their national development strategies and plans and to increase investments at the local and national level in addressing the Millennium Development Goals for water and sanitation.
3. Recommend that SOPAC seek a mechanism to sustain the Coordination Unit for the Pacific Partnership Initiative on Sustainable Water Management.
4. Recommend that SOPAC develop an initiative for monitoring regional progress on meeting the Millennium Development Goals for water and sanitation.
5. Recommends that SOPAC continue to provide assistance to Pacific SIC to improve Water Governance.
6. Recommend that SOPAC ensures that continued assistance be provided to Pacific SIC on water resource assessment, monitoring, analysis, prediction and water demand management.