



Applied Geoscience and Technology Division (SOPAC)  
 Division Géosciences et Technologies Appliquées (SOPAC)

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## First Meeting of the SOPAC Division Nadi, Fiji Islands, 17-22 October 2011 (SOPAC-1)

AGENDA ITEM	TITLE
8.	OCEAN AND ISLANDS PROGRAMME
8.1	OIP Summary of Work Programme Implementation September 2010 – August 2011

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### PURPOSE

The purpose of this report is to provide the SOPAC Division Meeting delegates with an account of the implementation of the Ocean and Islands Programme (OIP), under its 2011 Work Plan (September 2010 – August 2011).

### BACKGROUND AND COMMENTS

#### The Ocean & Islands Programme role

As per the last annual report it is important to introduce and reaffirm the unique function and role of the Ocean & Islands Programme (OIP) in the context of both the SOPAC Applied Geoscience and Technology Division as well as the broader SPC Parent Agency. The OIP delivers a distinct complementary service to our sister programmes both within the SOPAC Division (Water & Sanitation Programme and Disaster Reduction Programme) and the broader SPC (e.g. Economic Development Division, Fisheries, Aquaculture and Marine Ecosystems Division, Land Resources Division). The Ocean & Islands Programme continues to work across a broad range of marine, coastal and island resource use and applied science issues and offers a range of specialist technical capacities, skills and tools which are continually reviewed to ensure they are responsive to contemporary PIC needs and issues.

Our technical role is directed towards the collection of baseline data such as bathymetric products, maritime boundaries data, oceanographic and geophysical data, geodetic data, geological and geomorphologic assessments, environmental baselines such as marine ecosystem habitat mapping, modelling hydrodynamic processes, sealevel and shoreline monitoring, as well as data collection and support in the area of vulnerability reduction and climate change adaptation. Additionally, OIP supports improved decision making and policy development in these key sector areas and for example; is undertaking a major project of policy development to support growing regional interest in the deep sea minerals sector. The Ocean & Islands Programme delivers such work through multiple mechanisms including direct capacity supplementation to PICs, partnerships with PI Governments and agencies (e.g. SPREP, UNEP, Commonwealth Secretariat, Department of Climate Change & Energy Efficiency, Australia, NIWA, Geoscience Australia, etc.) and through multidisciplinary approaches where OIP delivers “end to end” services or fulfils a portion of a broader programme or project of work. In certain circumstances OIP also competes for commercial contracts where the objectives of those contracts are aligned with country assistance needs and OIP’s existing mandate.

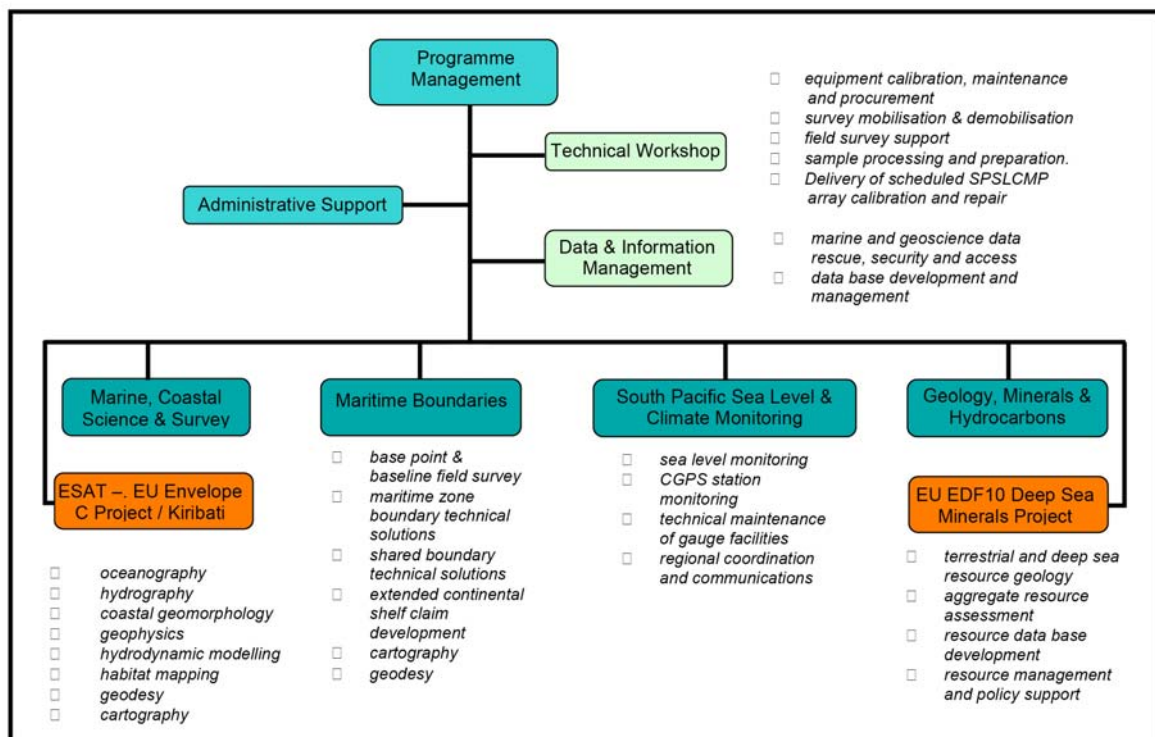
The Ocean & Islands Programme also integrates into its work important complementary tools such as resource economics, remote sensing and GIS and maintains a multi-million dollar technical workshop facility which provides crucial support to our in-house technical and scientific teams as well as direct support to PICs on technical issues. We acknowledge the importance and are active in the preservation and management of geoscience data and information and we are continuing to develop our own web accessible “Geonetwork” data management and access system (<http://geonetwork.sopac.org/geonetwork/srv/en/main.home>).

The SOPAC 2010 – 2015 Strategic Plan incorporates the concept of agency-wide “KRAs” (Key Result Areas);

1. Monitoring & Assessment of Natural Hazards, Resources & Processes.
2. Management & Development of Natural Resources.
3. Management of Vulnerability & Risks.

These present an opportunity to articulate the broad manner in which many OIP tasks contribute to, for example KRA 3 - Management of Vulnerability & Risks. In the detailed report log frame a column is now devoted to indication of the KRA(s) to which a task contributes. In the OIP 2011 report log frame, KRA allocations are subservient to functional task area and the preface text to the log frame is organised into the major functional sectors of OIP in line with the organisational chart below.

**OIP organisational chart**



**SUMMARY OF KEY FUNCTIONAL SECTOR OUTPUTS**

The outputs are summarised under the following sectors:

- Marine, Coastal Science and Survey
- Geology, Minerals and Hydrocarbons
- South Pacific Sea Level & Climate Monitoring Project
- Regional Maritime Boundaries
- Data & Information Management
- Technical Workshop
- Management/Administration/Advocacy

## MARINE, COASTAL SCIENCE AND SURVEY

The largest sector within OIP with 6 staff working in the main functional areas of oceanography, hydrography, coastal processes & geomorphology, geophysics, hydrodynamic modelling, habitat mapping, geodesy & cartography. It is also important to note that a large proportion of the Technical Workshop sector's tasks are also oriented towards support and facilitation of this sector's work given its heavy dependence on field work, use of technical equipment and substantive requirements for specialist logistical, mobilisation and deployment support.

The sector has undertaken or is currently in the process of delivering a range of assessments, reviews and surveys. These have been characteristically diverse in terms of the type of request, locations of work and stakeholder groups and aims involved, however a growing trend towards the secondment of services to address issues of climate change adaptation and extreme event vulnerability is evident. Likewise the greater proportion of these tasks and requests are associated with issues in the nearshore and coastal zone.

The range has included several surveys in Fiji including; the development of coastal geomorphology / hazard maps in the Navua Delta & nearshore environments; collaboration with the Fiji Government's Department of Fisheries, SPC's Aquaculture Sector and James Cook University under the Pacific Agribusiness Research for Development Initiative (PARDI) to improve pearl culture in Savusavu Lagoon through the collection and analysis of water flow and quality parameters; most recently the OIP also joined with NIWA to provide a successful bid to complete a number of technical components of the SPREP initiated Pacific Adaptation to Climate Change (PACC) Project, in this case OIP will collect crucial nearshore and estuarine bathymetric data as well as coastal zone topographic data in the Navua and Rewa delta areas.

The OIP has joined with our sister Programme (Disaster Reduction) and the SOPAC Division's Resource Economics Sector to deliver an EU funded (EDF9 C Envelope) comprehensive package of support to the Pacific OCTs. OIP's main role will be in French Polynesia where the sector team has been tasked to work in collaboration with the '*Service de l'Urbanisme*' of French Polynesia to assess the storm surge hazard in the Tuamotu Archipelago at an atoll scale. The work is largely concentrated in Ranigroa Atoll and includes bathymetric, topographic and oceanographic baseline collection; modelling of coastal inundation from tropical cyclone-induced surface waves and the contribution to an atoll storm surge hazard regulation framework for the Tuamotu Group. Fieldwork started in July and is expected to be completed by Dec 2011 and the Project works are expected to be completed in July 2012.

Work in the Kingdom of Tonga continues with a collaborative effort again between OIP and DRP in partnership with Geoscience Australia to deliver tsunami inundation models and subsequently improved tsunami response planning for the main settlement of Nukualofa, Tongatapu. This work is funded through the AusAID Pacific Public Sector Linkages Proposal (PPSLP) and through March and April this year the Marine, Coastal Science and Survey team completed a 40-day bathymetric survey of north Tongatapu Island and a comprehensive topographic survey of Nukualofa and surrounds. The OIP is now waiting for LiDAR data to be collected in the lagoon shallows under a separate Australian Government assistance package (International Climate Change Adaptation Initiative (ICCAI)) to then incorporate these multiple data sets into a continuous 3D model to facilitate accurate tsunami inundation modelling.

The team carried out extensive work in Saipan Lagoon in the Commonwealth of the Northern Mariana Islands (CNMI) through the 3<sup>rd</sup> quarter 2010 with the objective to establish a hydrodynamic model describing water flow in the lagoon, dilution dynamics of the town's wastewater outfall and to undertake a coastal erosion assessment. Fieldwork included the collection of oceanographic, coastal and topographic baseline data and the development of a three-dimensional hydrodynamic model. This work was completed in collaboration with the CNMI Coastal Resource Management Office and was funded in kind by the CNMI Government and NOAA (Technical Reports delivered in November 2010).

OIP has delivered a number of assessments to the Cook Islands in the reporting period including several tasks funded in-kind by the Cook Islands Government. These include work undertaken for the Ministry of Marine Resources; a desktop review of existing data and information holdings of SOPAC related to the Muri Lagoon; and the collection of oceanographic data and the development of a benthic habitat map of Muri Lagoon. Also completed was hydrographic work for the Ports Authority to assess possible locations of alternative cruise ship tender landing sites on Rarotonga. OIP has also partnered with NIWA to develop a comprehensive geospatial framework to inform climate change adaptation in the coastal zone of selected areas of Mangaia Island. This work is implemented as a component of the SPREP initiated

PACC Project and the team spent a month in the 1<sup>st</sup> quarter of 2011 collecting nearshore bathymetry, topographic and oceanographic data. This data is now being used by NIWA who are taking responsibility for the wave climate and modelling components.

The OIP will also mobilise its geophysical capacity to Yap State in Federated States of Micronesia to complete work under contract to the FSM Petroleum Corporation. The team has been requested to undertake a geotechnical survey to support the appropriate design and construction of a seawall/bund at the petroleum storage facility at Colonia. The work will include drilling of the substrate, core retrieval and analysis, standard penetration testing and nearshore bathymetric and topographic survey. This survey requires considerable mobilisation effort and requires significant support from the Technical Workshop staff to arrange logistics and to complete the field tasks. Similarly, the Regional Maritime Boundaries sector of OIP will also support the survey tasks associated with this task – the equipment is presently in transit to Colonia.

This sector also undertakes a range of “ad hoc” tasks in response to ongoing member requests for technical review of documents such as; EIA documents, coastal engineering plans and development applications and proposals. Too numerous and variable in content, size and effort required to fully articulate here, these services can take the form of an email response requiring a few hours of research, to site visits and briefing which require weeks of research, travel and follow up. These services are mostly supported through OIP’s recurrent budget and likewise some ongoing regional monitoring efforts such the PRISMS (Pacific Regional Island Shoreline Monitoring System) and salinity monitoring in swamp taro pits in Tuvalu are funded through our core Programme in recognition of the importance of such issues in the region and the fact that OIP is unique in having the technical capacity to implement such work. Unexpected cuts to OIP Programme funding from NZAid in mid 2011 are impacting these services and placing untenable strain on OIP’s crucially important Technical Workshop facility. Given that many of the tasks OIP, and particularly the Marine, Coastal Science and Survey sector, implements are dependant on a fully functional Technical Workshop facility these cuts are at a regional and country level a strategic mistake and will have far reaching consequences to service delivery to Members.

## **GEOLOGY, MINERALS AND HYDROCARBONS**

The Geology, Minerals and Hydrocarbons sector traditionally covers task areas of terrestrial and deep sea mineral resources, geology and aggregate resources. The sector undertakes related technical assessments and provides support to members in mineral resource management and policy development. Much of the sector’s database development and maintenance is being systematically transferred to the OIP Geonetwork facility for administration. The responsibility of the Petroleum Data Base (which current lies with the Regional Maritime Boundaries sector) will also be transferred for Geonetwork administration as resources allow.

The functions of the Geology, Minerals and Hydrocarbons sector related to metalliferous and non-metalliferous resources are relatively distinct and a major area of ongoing interest and Member requests relate to industrial resources or construction aggregates (sand, gravel, rock and unsorted fill materials). Sustainable supply of construction aggregate has become a major issue of importance regionally and is often inextricably linked to OIP’s Marine, Coastal Science and Survey sector as well as the Divisional Resource Economics sector. This is because beach mining undertaken to supply regionally growing demand for construction aggregate is an unsustainable and dangerous practice with immediate negative impacts on shoreline systems, processes and coastal vulnerability and the development of alternatives requires resource economics to elucidate optimum, cost-effective solutions.

Over the last reporting period, funding for the Aggregates Geologist position was exhausted and due to further cuts in NZAid programmatic allocations in 2011, OIP will for the foreseeable future, be unable to recruit for this key position within the Geology, Minerals and Hydrocarbons sector. Obviously, our subsequent ability to respond to requests with respect to aggregate supply is now diminished and work in this focal area has been largely dominated by OIP’s role in the EU-funded (EDF9 and 10 – Envelope B allocations) Environmentally Safe Aggregates for Tarawa (ESAT) Project – Kiribati. Jointly implemented by OIP and the Government of Kiribati’s Ministry of Fisheries and Marine Resource Development (MFMRD) the ESAT Project is a natural progression of the sustained technical effort by OIP to investigate the feasibility of developing a lagoon basin aggregate resource to replace the unsustainable volumes of beach aggregate mining (up to 70,000m<sup>3</sup>/year) which are taken from South Tarawa’s beaches every year. In turn, beach mining presents one of the single greatest threats to shoreline integrity in urban atolls today and ESAT is a direct response to this manageable problem and will seek to provide an environmentally sustainable, alternative supply of construction aggregate to the rapidly growing urban community on

South Tarawa. The obvious links to shoreline vulnerability issues in atolls and ongoing concern over sea-level rise and other threats associated with climate change impacts in atoll islands have seen this Project heralded as one of the most pragmatic “no-regrets” climate change adaptation responses in the region today.

Day-to-day management of ESAT is provided by a specifically recruited, Tarawa-based Project Manager who in turn is supported by both the broader OIP technical team and MFMRD. Very significant progress has been achieved over the reporting period with the highlight being the signing of a €2.3million (ca AUD \$3.04 million) contract with a Singapore ship building company (Heavy Load Pte.) to construct and deliver the ESAT dredge vessel, the MV *Tekimarawa*. A marine surveyor has also been contracted to oversee vessel construction and ensure its compliance to the International Ship Classification Standards. Other important milestones include; the approval of the Kiribati Attorney General's Office of this new State Owned Enterprise; the completion of a comprehensive EIA study and process (draft report completed); undertaking of 22 associated community consultation meetings throughout South Tarawa and in collaboration with the Environment Department; a two-month programme of community consultation/participation conducted through the 1<sup>st</sup> quarter 2011 (aimed at behaviour change and awareness of the ills of beach mining); development of a strategic communications implementation plan and training of local NGOs to implement outreach efforts; ESAT has also progressed links with the “Sandwatch” initiative to provide awareness of shoreline processes to schools across South Tarawa.

The largest component within the sector at this time is the EU-funded (€4.7 million) EDF10 Deep Sea Minerals in the Pacific Islands Region Project which will develop legal and fiscal frameworks for sustainable deep sea mineral resource management. With funding for this Project finally becoming available in late 2010 OIP immediately implemented procedures for recruitment and the DSM Project Manager has been in place since February 2011. Subsequent recruitment of the Project DSM Legal Adviser and Project Officer were also finalised by the 2<sup>nd</sup> quarter 2011, the Legal Adviser will take up permanent post (ex UK) in October 2011. In order to brief Members on the scope and aims of the Project as well as to update PICs on the current status of understanding of regional deep sea mineral resources and state of the fledgling DSM regional industry, the Project held its inaugural meeting in June 2011. Participants from across the region joined with experts from around the globe to provide presentations and briefings on the status, opportunities and risks of these resources and industry. During the meeting a PIC Project steering committee was assembled and the first meeting held and likewise immediately following the inaugural Project meeting, technical experts who attended came together for the first technical steering committee meeting to discuss the development of a comprehensive review of the state of knowledge with respect to the three main DSM resource types. Prior to this meeting the Project had also undertaken extensive negotiations and had developed a ToR and signed a contract with UNEP GRID Arendal to oversee and develop this expert review and other associated products in collaboration with OIP and the technical steering committee.

Initiated in 2007, this year OIP also completed a long term and logistically challenging venture funded by the Government of Kiribati to undertake *An Evaluation of the Remaining Phosphate Deposits on Banaba Island* (SOPAC Technical Report 430). This work included drilling and survey at strategic locations on Banaba Island and complete with interpretation and geochemical analyses of the core samples stands as a major land mark in the understanding of the remaining resources on Banaba. The report was presented to the President of Kiribati and Officials of the Ministry of Marine and Natural Resource Development and the Kiribati High Commission during a special presentation in early 2011. Additionally, the sector has also supported Members in the terrestrial mining sector and has over the last reporting period assisted the Government of Solomon Islands in the development of the Isabel Nickel Mine tender and likewise, the Government of Fiji in their Mt Kasi Gold Mine Tender Process.

### **SOUTH PACIFIC SEA LEVEL & CLIMATE MONITORING PROJECT (SPSLCMP)**

Implemented due to increasing regional concern over climate change associated sea-level rise and the poor understanding of sea-level variability in the region before the development of the SPSLCMP array, between 1991 and 2001 the Project established a network of high-resolution sea-level monitoring stations in Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshal Islands, Nauru, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu. Overall management of this long term multi-million dollar AusAID-funded initiative is provided by Bureau of Meteorology Australia (BoMA); however, the Project's ongoing works are also implemented in partnership with OIP, Geoscience Australia (GA) and the participating PICs. Since establishment, the array has captured a mostly uninterrupted stream of high quality, accurate data on sea level, temperature (water & air), barometric

pressure and wind speed and direction. Associated CGPS (Continuous GPS) stations have also been established in each country to account for tectonic movement.

The Project was expected to enter Phase V in January 2011; however, due to changes in the structure of the Project, BoMA requested AusAID for an extension for Phase IV through to 31<sup>st</sup> December 2011. In part this extension facilitates a planned transition of the SPSLCMP into the new Pacific Climate & Oceans Support Programme (COSPPac) which is expected to amalgamate several related Pacific Islands orientated initiatives within BoMA, however is not envisaged to greatly alter the ongoing role or resourcing of OIP or GA in the technical implementation of array maintenance. Assuming COSPPac does become operational in January 2012, this phase is expected to similarly run for 5 years until December 2017. Associated with the present phase of SPSLCMP is the Australian Government's ICCAI-funded Operational Network Upgrade Project (ONUP). ONUP began field work in early 2011 and will refurbish and upgrade the measurement and communication technologies at all 12 PIC stations to ensure their continued capacity to measure, record and transmit high-quality sea-level and climate data for another 10 to 15 years. To date ONUP has completed upgrades in Tonga and Fiji and work is underway in Samoa. OIP also provides additional support to ONUP including in country assistance with the technical retrofitting of the gauge stations and communications gear, the facilitation of contract arrangements of local service providers and communications with relevant Ministries and stakeholders.

Otherwise, OIP's role in the SPSLCMP remains stable with the ongoing provision of routine and non-routine maintenance and calibration of the gauges, which includes the sea-level stations and associated CGPS and is undertaken collaboratively with Geoscience Australia. Routine and non-routine maintenance visits (due to system failures, etc.) over the reporting period have been made to the gauges in; Nauru Nov '10; Kiribati Nov '10; Fiji Dec '10; Papua New Guinea Mar '11; Tuvalu Jun '11; Marshall Islands Jul '11; Federated States of Micronesia Aug '11; and routine precision levelling surveys in; Marshall Islands Oct '10; Solomon Islands Nov '10; Papua New Guinea Dec '10; Federated States of Micronesia Feb '11; Vanuatu April '11; Cook Islands June '11; Fiji July '11; Tonga Sept '11 (planned) have been completed by OIP.

The OIP also hosts the SPSLCMP Regional Communications Coordinator and this position is tasked with monitoring of the array communications system's accounts; routine liaison with country Project focal points and BoMA; budget development for OIP's components of the Project and coordinates with BoMA on issues like the recent restructuring of the Project and how to optimise this for PIC Members. OIP also provides a strong advocacy role for the Project especially given that OIP's Marine, Coastal Science and Survey sector is one of the major users of the excellent geodetic control and sea-level data the array brings to PIC coastal vulnerability work and surveys.

## **REGIONAL MARITIME BOUNDARIES SECTOR**

Funded by AusAID and NZAid through OIP's recurrent programmatic budget the Regional Maritime Boundaries sector work has been implemented by OIP since 2001 at which time the project was transferred from the Forum Fisheries Agency (FFA). Subsequent work under this sector had until 2007 been mainly concerned with the development of PIC baselines including archipelagic baselines where applicable and computation of subsequent marine zones (territorial seas 12 nautical miles (M); contiguous zone 24M and exclusive economic zone 200M) in accordance with the provisions of the UN Convention on the Law of the Sea (UNCLOS). Much of this work started at first principles in 2001 and by 2005 OIP had developed data reports suitable for declaration purposes for Cook Islands, Nauru, Niue and Tuvalu. Irrespective, at the time of this 2011 annual report only one of these countries, Nauru, has used this information to declare its maritime zones and at the time of writing only Fiji, Nauru and Palau have declared their maritime baselines, zones and outer limits in accordance with UNCLOS. Additionally, Papua New Guinea, Solomon Islands and Vanuatu have declared only their archipelagic baselines and of these countries, Fiji, Palau, Solomon Islands and Papua New Guinea are all in the process of updating those respective baselines and maritime limits with the assistance of the OIP Maritime Boundaries Sector. Vanuatu lodged its new archipelagic baseline in November 2010.

A critical gap in OIP's Regional Maritime Boundaries sector capacity, which has contributed to the poor rate of declaration has been our restricted resources and mandate which only equips OIP to deliver technical/geodetic assistance to PICs. Whilst this assistance is fully utilised by most Members there is an almost ubiquitous issue preventing the use of the contemporary data OIP collects and uses to assist PIC with their boundary solutions. Throughout the region PIC maritime spaces legislation and regulations are almost ubiquitously outdated and frequently specifically prevent the use of the newer more accurate technical data OIP produces irrespective of its technical excellence. Added to this is a poor regional

awareness of this dynamic and the frequently limited capacity in countries to formulate the complex technical, legal and ultimately diplomatic solutions to update such legislation. Recognising this, OIP in 2010 requested the then SOPAC Governing Council to expand its Regional Maritime Boundaries sector to incorporate legal assistance to assist PICs undertake the necessary legislative changes and thus allow the use of contemporary boundaries data. Council declined this request; however, given OIP's work would not come to fruition without the provision of legal support, OIP turned to our partnership with Geoscience Australia/AusAID and the Commonwealth Secretariat to fill this vital gap.

As a result under the latest AusAID PPSLP grant the Australian Attorney General's Office has made available a part-time Legal Advisor with LoS (Law of the Sea) expertise and in June 2011 this Legal Advisor and OIP staff travelled to Niue to brief the Government on the status of their maritime boundaries and provide legal assistance to update legislation and subsequently incorporate the improved data developed by OIP with the intention of facilitating Niue's ability to declare their maritime baselines, zones and shared boundaries. Similar legal assistance was also available at the most recent maritime boundaries development workshop in July 2011 and along with the 10 PICs with eCS submissions (extended continental shelf), 4 additional countries (Nauru, Niue, Marshall Islands and Samoa) were also invited to attend in the second week of the workshop to progress their maritime boundaries legal/technical work. This approach was very successful with numerous countries now working on both their technical solutions as well as their legal frameworks to facilitate declaration. During the reporting period two, 2-week maritime boundaries workshops were organised. The 7<sup>th</sup> in the series was held in November 2010 and was another dedicated eCS development workshop and the most recent was the July 2011 workshop (the 8<sup>th</sup> over the last 5 years). Both of these were supported by OIP, our technical partners and funded by AusAID/PPSLP and as usual the technical teams from Cook Islands, Fiji, Federated States of Micronesia, Kiribati, Palau, Solomon Islands, Tonga, Tuvalu and Vanuatu who all have eCS submissions were invited to attend both workshops to continue on unfinished eCS submissions and to ensure they are prepared to defend their respective claims to the UN Commission on Limits of the Continental Shelf and the additional countries of Nauru, Niue, Marshall Islands and Samoa were invited to the second workshop to work on delimitation issues.

A further highlight of the last 12 months has been recent and exciting development and availability of satellite-borne imagery with a very high level of positional accuracy. This has brought a powerful new tool to bear on the issue of boundaries development in PICs as whilst imagery of adequate resolution has been available for some years its positional accuracy was not reliable, necessitating lengthy and often expensive and logistically difficult (due to the remote and far flung nature of many island groups in the Membership) geodetic control surveys. New imagery products combined high resolution (ca0.5m) and excellent positional accuracy (<15m error) in affordable image packages can now be used to derive baselines with an unparalleled level of accuracy and confidence negating the need for *in situ* survey. Such products and opportunities are already being used by OIP; for example with respect to the remote Rotuma Islands in the Fiji Group and Phoenix Group Islands, Kiribati. The Government of Kiribati developed their baseline solutions for the Phoenix Group collaboratively with OIP over the last quarter by using such imagery. In this case the purchases have been supported by the Commonwealth Secretariat with logistic and subsequent processing support of OIP and the Division's GIS and Remote Sensing (GIS & RS) sector. Similar approaches are now being adopted by other PICs which will expedite regional maritime boundary development.

## **DATA & INFORMATION MANAGEMENT**

As reported last year, OIP has made significant ongoing efforts towards improved, more systematic method of collating and providing access to its historical and newly collected data via the OIP, web accessible, Geonetwork system (<http://geonetwork.sopac.org/geonetwork/srv/en/main.home>). Geonetwork is an open source database platform which can handle large and complex datasets associated with the different technical sectors of OIP but has made particular improvement with the collation, accessibility and security of data from the Marine, Coastal Science and Survey Sector. Geonetwork became operational in 2008 and today boasts some 334GB of uploaded data representing a 42% increase over that reported in 2010. Geonetwork use statistics for the reporting period indicate: the total number of downloads has increased 60%; total number of web "hits" has increased from 212,435 to 756,490 (356%); of these hits 57% were from Member nations, 15% were internal SOPAC requests and the remaining 28% were international, spanning some 90 Nations. In summary, Geonetwork is proving successful, appropriate to needs and appears to be servicing the requirements of multiple stakeholders groups including, internal, regional and international users. New and related functions are also gradually being transferred from other sectors across the SOPAC Division to the Data and Information Management sector/Geonetwork of OIP; the most recent addition being responsibilities around the

monitoring of research cruises in PIC waters to allow OIP to more systematically explore opportunities of transiting vessels to collect strategic data such as bathymetry for maritime boundaries development.

Geonetwork content is reaching the capacity of its current server and OIP has invested in the Divisional “compendium” efforts with respect to the purchase of a new server array which will increase the capacity and security of Division data holdings. Geonetwork is expected to be migrated across to this new facility in the 3<sup>rd</sup> quarter 2011 and the software platform will also be upgraded at this time. These improvements will extend Geonetwork’s operational life and provide expanded capacity for new content. OIP’s broader efforts toward populating the new SOPAC Division MapServer ended in mid 2011 as funding to recruit the former data content position is in question following the cut in OIP’s Programmatic funds. Likewise, administering content on Geonetwork requires sustained, skilled and dedicated resources and this ongoing commitment to PICs does not suit “project” orientated funding as it is a fundamental, ongoing function of the Programme. The quantum of resources OIP expends in the collection of data in PICs providing baseline data in support of issues of resource management, vulnerability and adaptation, etc. means activities like Geonetwork are a crucial component of the success of the Programme as a service and support to Members. Presently, there are very limited specific or sustained resources for Geonetwork and recent cuts to OIP’s programmatic funds simply places more strain on our ability to sustain this critical and very successful undertaking.

## **TECHNICAL WORKSHOP**

The Technical Workshop’s predominant role is focused towards supporting work in the OIP in the Marine, Coastal Science & Survey; SPSLCMP; Geology, Minerals and Hydrocarbons and Regional Maritime Boundaries sectors; however, the Technical Workshop also supports functions in our sister Programmes as well. It is important to reiterate that it is implicit in the reporting of the preceding OIP Sector’s achievements and work that the Technical Workshop was and is an indispensable component of that success and progress, particularly where mobilisation and deployment of equipment and field surveys have been undertaken. The Technical Workshop has a direct role in the procurement, servicing, modification, repair, calibration and cataloguing of the substantial array of marine, geodetic and geological equipment and instruments held by the SOPAC Division and it is an intrinsic part of the upkeep, deployment and mobilisation/demobilisation of millions of dollars worth of equipment safely and successfully every year. The Technical Workshop also oversees HoS issues and is instrumental in the upkeep of safety equipment and routine safety training of all field staff.

Over the reporting period the Workshop staff have delivered ongoing scheduled (and unscheduled) maintenance on the SPSLCMP gauges and associated climate monitoring sensors, power and communications systems to 7 PICs and technical support was also provided during upgrade work associated with ONUP (Operational Network Upgrade Project) in 3 countries (see SPSLCMP for details). The Technical Workshop staff and facility also provided support and field assistance on the; Tonga multi-beam survey, March ‘11; French Polynesia survey mobilisation, May ‘11 (work ongoing through the 3<sup>rd</sup> and 4<sup>th</sup> quarters ‘11); and the Federated States of Micronesia, Yap geotechnical survey (rig mobilisation) May ‘11 (and fieldwork 4<sup>th</sup> quarter 2011).

Scientific and technical equipment have established service lives beyond which data collection becomes less reliable/accurate and in many cases ongoing improvements in instrumentation means that gains in efficiency achieved by using more up-to-date equipment outweighs the costs of replacement. Thus an important function of the workshop is to contribute to the strategic purchase of equipment to ensure service life is maximised and that instruments are appropriate to contemporary PIC needs. Two such important purchases this year are a new USD150,000 multibeam echo-sounder system “R2 Sonic 2022” (ship-mounted system which allows seafloor mapping to 2.5 km depth) and new associated positional system AUD32,674 “Marine STAR 9200” (a system which uses an array of satellites to provide unparalleled positional data for moving survey platforms). The budget to support the workshop equipment inventory and work is generated through contracts, project and recurrent budget. Cuts in OIP’s 2011 NZAid recurrent budget, (which previously made an important contribution to the Technical Workshop) place stress on our ability to maintain these crucial services.

## **MANAGEMENT/ADMINISTRATION/ADVOCACY**

Involved with the day-to-day facilitation, management and oversight of the OIP as well as the longer-term administration towards the overall strategic delivery of OIP’s services and work plan this sector initially consisted of the Programme Manager and the Programme Assistant; however, the success of the OIP is



built around its multi-disciplinary teams and input of all senior staff who take active leading roles particularly in their areas of specific expertise. This sector interacts closely with Corporate Services, the Resource Economics sector, the broader Divisional Executive Management Team and the Directorate to align the Programme with Divisional and SPC Secretariat objectives. Strategic technical partnerships are also crucial to the ongoing development and delivery of work in OIP and again this sector plays an important overall role in the exploration and management of these relationships. Related is also the ongoing liaison with other regional and international partner agencies and interest groups on a range of matters within OIP's work mandate and interests. This sector also leads participation in working groups and other regional fora and contributes to regional reporting and strategic planning mechanisms such as the SPC CRGA, SPC JCS Process, Pacific Plan reporting, regional institutional review processes, and so on.

Crucial to OIP's success and function are the continual development of proposals and the exploration and management of vital strategic partnerships, again these duties are shared across the Management and Senior Staff level of the Programme depending on the technical area and relevant expertise and available time. To illustrate the importance of strategic partnerships in OIP some typical examples instrumental to our successful delivery through 2011 are: the AusAID/PPSLP funded Tsunami Phase III Project implemented by OIP, Disaster Reduction Programme and Geoscience Australia; the AusAID/PPSLP-funded Maritime Boundaries Development workshops and legal assistance to PICs implemented by OIP, Geoscience Australia, Australian Attorney Generals Office, UNEP Grid Arendal, Commonwealth Secretariat, Forum Fisheries Agency; the proposed development of OIP's Hydrographic Capacity through an AusAID/PPSLP proposal in partnership between OIP, Australian Hydrographic Office and assistance of the SW Pacific Hydrographic Commission; the EU-funded Deep Sea Minerals Project which is reliant on contracted assistance of UNEP Grid Arendal office and the voluntary input of a number world leading scientists who partner on the development of a comprehensive review of deep sea mineral issues in the Pacific Region; delivery of the AusAID-funded SPSCMP which is implemented in partnership between Bureau of Meteorology Australia, Geoscience Australia and OIP; OIP has also partnered with NIWA to deliver on projects in PICs where our complementary skills provide synergistic advantage and improved delivery.

Proposal development is also important to highlight here as it requires significant commitment from a number of OIP Senior staff. The greater part of OIP's budget is composed from the continual competitive bidding for contracts and proposal development and OIP is successful in these endeavours. This is evidenced through growth in the Programme's size, staff numbers and range of technical output even though OIP's core/programmatic funding has been stagnant for over 10 years. Thus recent and unexpected cuts to OIP's 2011 programmatic contribution from NZAid are potentially very damaging and threaten the growth and response of the Programme. This is because OIP makes excellent use of its programmatic funds through the consistent successful delivery of its work plan associated with those moneys but also by using our core senior capacity to generate significant additional funding to augment service delivery to Members. In 2011, OIP's approved total FJD budget was approximately \$5.96 million; of this only \$1.2 million was approved recurrent programmatic funds (AusAID and NZAid). In 2011, for every \$1.00 of programmatic budget invested in OIP by AusAID and NZAid, OIP secured an additional \$3.96 independently through competitive proposals and contracts. Put another way any cuts in OIP's core programme budget have a 4-fold impact on our overall performance and Members must expect service reduction from OIP as indicated throughout this year's annual report as a result of the NZAid cuts to OIP.

## **RECOMMENDATION**

The SOPAC Division meeting is requested to consider and accept this summary of implementation of the Ocean and Islands Programme 2011 Work Plan and make comments as necessary.