

**SECRETARIAT OF THE PACIFIC COMMUNITY****FORTY-THIRD MEETING OF THE
COMMITTEE OF REPRESENTATIVES OF GOVERNMENTS AND ADMINISTRATIONS**
(Suva, Fiji, 12-15 November 2013)

AGENDA ITEM 2.2.2: APPLIED GEOSCIENCE AND TECHNOLOGY DIVISION**EXECUTIVE SUMMARY**

(Paper presented by the Secretariat)

SUMMARY

1. This paper reviews the achievements of the Applied Geoscience and Technology Division (AGTD) (formerly SOPAC) in 2013, and outlines plans for 2014. It also details some highlights of AGTD's work and its progress in achieving its strategic plan key result areas (KRAs) and SPC Corporate Strategic Plan key development outcomes (KDOs).
2. AGTD has a new Director who took up his position in January 2013. After a wide range of extensive internal study and analysis, discussions with country members (in-country and in Suva), analysis of Pacific geoscience needs and benchmarking with international applied geoscience organisations, a narrative and developing vision is presented for CRGA consideration.
3. AGTD has had a successful year with reasonable levels of funding and a staffing level of 85 people. Highlights include: the development of a disaster reduction/climate change 'roadmap' for joint approaches in the two fields; the building of a number of emergency operations centres (for example in Pohnpei, Federated States of Micronesia and Makira, Gizo and Lata, Solomon Islands); the development of a sophisticated tsunami model for Tongatapu that will assist with essential disaster planning; a joint study involving all of the division's programmes and SPC's gender and culture programmes in the examination of increased environmental vulnerability of Lifuka Island, Tonga; the overseeing of the successful construction of a sand and gravel barge for Kiribati; the completion of water catchment studies for Samoa; the roll out of the world's first template for a legal framework for deep sea minerals; the successful completion of dozens of workshops in all sectors across the region; and the training of over 30 Pacific Islanders in geographic information systems (GIS) and remote sensing.

RECOMMENDATIONS

4. CRGA is invited to:
 - i. Consider the Director's report on his first eight months in the position (paragraphs 34-39 and the proposal for an earth science course) and provide feedback. The Director seeks a CRGA mandate for his suggested way forwards for AGTD.
 - ii. Note the division's results and its progress towards the KRAs in its strategic plan.
 - iii. Note the outline of the 2014 staffing budget and work programme.
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APPLIED GEOSCIENCE AND TECHNOLOGY DIVISION

PURPOSE OF THE PAPER

1. This paper reviews the achievements of the Applied Geoscience and Technology Division in 2013 and outlines work planned for 2014. The Division is currently undertaking a mid-term review of its strategic plan. In addition, the new Director, who took up position in January 2013, is developing a new vision for the Division with suggested new directions; these are presented in this paper.

PRESENTATION OF THE DIVISION

Divisional strategic plan

2. The current strategic plan was published in October 2010 and addresses the time period 2011-2015. A review of the strategic plan is currently being undertaken and is due to be finalised by the end of 2013. The key areas addressed in the strategic plan include: context, values, improving service delivery, developing priorities and key result areas, monitoring and evaluation, and detailed programme-level aims and goals. The plan has four key result areas (KRAs): 1) the monitoring and assessment of natural resources, processes and systems; 2) the development, management and governance of natural resources; 3) managing vulnerability and risk; and 4) delivering efficient, effective and relevant services to member countries. A list at the end of the report summarises examples of how the Division has addressed the KRAs; however, a few examples from this year are listed below.
3. For KRA 1: the deep sea minerals project has published a range of information products that list and describe the range of deep sea minerals present within the boundaries of member country exclusive economic zones (EEZs). The Ocean and Islands Programme (OIP), together with Geoscience Australia has developed a sophisticated model of the generation of tsunamis from the Tonga trench and the velocity, path and impact of resulting tsunamis on Tongatapu that has greatly enhanced emergency planning in Nuku'alofa.
4. For KRA 2: the deep sea minerals project has created a template (the first of its kind in the world) for developing legal frameworks for minerals from the ocean floor. OIP has built a sand and gravel barge for Kiribati that will allow environmentally friendly development of the Tarawa Lagoon aggregates and the creation of a new state-owned enterprise for Kiribati that is expected to generate jobs and income.
5. For KRA 3: three emergency operations centres have been built in Western, Makira and Temotu provinces of Solomon Islands. The Disaster Reduction Programme (DRP) made major regional progress this year in bringing together the climate change and disaster management communities of the region at a meeting in Nadi, Fiji, in July.
6. For KRA 4: since taking up position in January 2013, the new Director has visited New Caledonia, Federated States of Micronesia, Marshall Islands, Cook Islands, Tonga, Vanuatu and Solomon Islands, and has planned a visit to Kiribati, New Zealand and Australia before year end. In addition the Director has met with the Government of Fiji and all missions in Fiji (all of the members listed above plus Tuvalu and Papua New Guinea). The main purpose of these visits has been to assess the range and level of services offered by the division to member countries; to hear feedback, including criticism; and to assess demand for new services and emerging themes that the division does not currently address. The geographic information systems (GIS) and remote sensing unit within the division has trained over 30 Pacific Islanders from a wide range of countries in the development of GIS and remote sensing skills and offered each the opportunity to address a key issue from their respective country in a friendly and expert environment. A wide range of issues were addressed in this way, including land-use, coastal management, forestry and agricultural assessments.

Objectives

7. The goal of the division is to apply geoscience and technology to realise new opportunities for improving the livelihoods of Pacific Islanders. The overall objectives are addressed by the KRAs described above. The range of services offered by the division is wide and is encompassed within a number of broad objectives: 1) understanding the impact of waves, tides, and atmospheric–oceanographic interactions on coastal and low-lying island areas; 2) encouraging sustainable and inclusive development of geological natural resources such as water, minerals and energy; 3) understanding all aspects of hazard and risk and developing management and coordination strategies for increasing resilience (to hazard and risk); 4) addressing the fundamental issues of water resource and supply, water governance, clean drinking water and sanitation; 5) offering a range of geoscientific services for the region, including GIS, remote sensing, marine geophysics and bathymetry; and 6) keeping abreast of emerging issues and progressive thinking.

Key services/sectors

8. The division is structured within a number of programmes and technical service areas: 1) Ocean and Islands; 2) Water and Sanitation; 3) Disaster and Risk Management; and 4) Director’s Office, including GIS and remote sensing, information and communications technology (ICT) systems development, and resource economics.
9. The Ocean and Islands Programme (OIP) works across a broad range of marine, coastal, and island resource use, applied science, and vulnerability issues. It offers a range of unique specialist technical capacities, skills and tools in support of member country needs. Due to the diverse and highly technical mandate, OIP often provides technical support to other divisions and programmes in the delivery of projects and tasks (e.g. Disaster Reduction Programme; Water and Sanitation Programme; Economic Development Division; Fisheries, Aquaculture and Marine Ecosystems Division; Land Resources Division). OIP also delivers ‘end to end’ projects, technical advisory services, and distinct tasks in its own right.
10. The collection and analysis of new geoscience baseline data underpins many OIP activities. OIP has significant experience collecting and analysing bathymetric data and products, maritime boundary data, oceanographic and geophysical data, topographic data, geological and geomorphologic assessments, and environmental baseline data such as marine ecosystem habitat mapping. This data collection is usually undertaken at the request of SPC members in order to support specific decision-making or to evaluate options regarding development, vulnerability or adaptation tasks and projects. OIP uses these data to perform empirical analysis such as hydrodynamic modelling and statistical and quantitative analysis. OIP delivers these products as reports, charts, recommendations and country briefings depending on the needs and requests of members.
11. OIP is also involved in applied research and environmental monitoring where these needs are directly aligned with regional priorities. For example, OIP has had a long involvement supporting and implementing the Pacific Sea Level Monitoring project (part of the Australian government’s Climate and Oceans Support Program in the Pacific) in response to member’ concerns over climate change associated sea level rise and the need to better understand sea level variability in the region. Likewise, OIP is greatly expanding understanding of regional wave climate, including forecasting and potential early warning systems (e.g. WACOP – Waves and Coasts in the Pacific project). This work recognises that anomalous wave events bring far greater threats to Pacific Island shores than incremental sea level rise alone and seeks to build understanding of wave climate in the region. Related to this is OIP’s long involvement in bringing new empirical understanding to soft-shore processes (erosion/accretion) in Pacific Islands. It follows that OIP is heavily engaged in climate change science and technical support to members in adaptation assessment, design and implementation. OIP scientists also publish in international peer reviewed journals and contribute to important international scientific processes such as the International Panel on Climate Change (IPCC). OIP also leads the world in some areas of ocean resource spatial management and policy development. For example, the Deep Sea Minerals in the Pacific Islands Region: a Legal and Fiscal Framework for Sustainable Resource Management project

is developing fundamental legislative frameworks and policy to guide the conduct of the new deep sea minerals industry and protect Pacific Island interests and environments. Likewise, the OIP-led Regional Maritime Boundaries Programme has assisted 10 Pacific Island countries to lodge extended continental shelf claims totalling more than 2 million km² in area and, since 2012, has facilitated the development and signing of nine regional shared boundary agreements. Nowhere else in the world has such rapid progress been achieved, and the model of maritime boundary development work OIP has built with its implementing partners is now being emulated in Africa and the Caribbean.

12. Strategic partnerships are absolutely key to the continued success of the Ocean and Islands Programme across all work sectors, and OIP works with numerous partners. In addition, OIP delivers its work through a range of mechanisms, including direct capacity supplementation to Pacific Island countries and partnerships with Pacific Island governments and agencies, and through multi-disciplinary approaches with other SPC programmes or international agencies. OIP also delivers standalone 'end to end' services and, in certain circumstances, competes for commercial contracts where the objectives of those contracts are aligned with country needs. Finally, OIP also maintains the multi-million dollar technical workshop facility at the AGTD compound. This service provides crucial laboratory and technical support to all divisional scientific field work.
13. **The Water and Sanitation Programme (WSP)** operates in the knowledge that access to clean water and sanitation is a fundamental and UN-sanctioned human right (UNGA Res 64/292 28 July 2010), and that the achievement of water security is fundamentally linked to all of the development goals of Pacific Island countries and territories (PICTs) and the Millennium Development Goals (MDGs). The programme also operates under the internationally recognised principles of Integrated Water Resources Management (IWRM), which involves the effective management of a complex network of natural resources and human systems in all their many interconnected elements: from ridge to reef and from community to cabinet.
14. This approach enables WSP to assist members on many different levels, including: water governance; water resource assessment and management; provision of effective and efficient water services; data collection, management and analysis; community-level water, sanitation and hygiene (WASH) initiatives; pollution reduction, education and behavioural change; as well as disaster preparedness, assessment and response.
15. **The Disaster Reduction Programme (DRP)** exists to provide PICTs with technical and policy advice and support to strengthen disaster risk management (DRM) practices. DRP carries out this responsibility in coordination and collaboration with other technical programme areas within the division, other divisions of SPC and a range of regional and international development partners and donors. In 2013, as part of an effort to increase the visibility of its work, DRP redefined its role in disaster risk management capacity building to focus on the following service areas:
 - Training and capacity development
 - Strategic policy and technical advice
 - Scientific and technical information to manage risks
 - Coordination of partners and resources
 - Appropriate technology and investments
16. A series of information brochures that outline in detail the focus of work in the service areas may be obtained through the following link:
[http://www.pacificdisaster.net/pdnadmin/data/original/SPC SOPAC 2013 DRP Programme Flyer.pdf](http://www.pacificdisaster.net/pdnadmin/data/original/SPC_SOPAC_2013_DRP_Programme_Flyer.pdf)
17. DRP comprises six technical teams, each with a Team Leader who reports to the programme's Deputy Director. It also includes a Programme Management/Administration unit. The technical teams are:
 - DRM Policy and Planning
 - Risk Reduction
 - Training and Capacity Building

- Information Management/Pacific Disaster Net
- EU EDF 9 B Envelope Project
- EU EDF 9 C Envelope Project

18. The Director's Office comprises the Director and supporting administrative staff together with staff engaged in a range of activities that includes SPC's most developed GIS and remote sensing office, a systems development office that develops custom ICT solutions for geoscientists in the division and other areas of SPC and an economics office that encompasses a range of cost benefit analyses of natural resources used in decision-making.

PROGRESS TOWARDS ACHIEVING DIVISIONAL STRATEGIC PLAN OBJECTIVES

19. The mid-term review of the strategic plan is currently being undertaken. This report provides examples of progress towards individual KRAs of the existing strategic plan followed by analysis by the newly appointed Director of strengths and weaknesses of the division and suggestions for new directions.

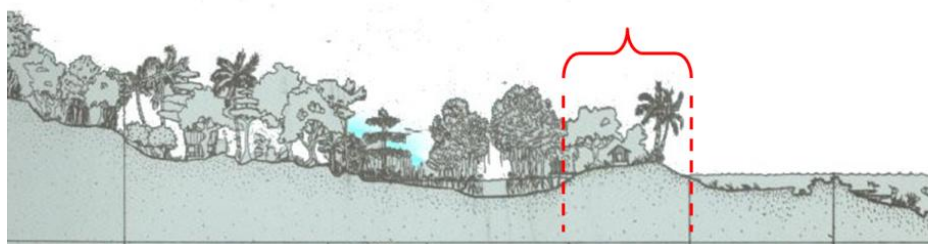
Progress towards KRA 1: Monitoring and assessment of natural resources, processes and systems

Assessment of Kosrae Coastal Vulnerability and Adaptation Planning; Federated States of Micronesia

20. This work originated as a request for assistance from the GIZ/SPC Coping with Climate Change in the Pacific Island Region project and is undertaken in collaboration with New Zealand's National Institute of Water and Atmospheric Research (NIWA). Working with the Kosrae State authorities, a week-long rapid assessment of coastal erosion and existing defence structures was undertaken. Historical air photographs were processed to assess long-term patterns of shoreline change. Kosrae Island has peaks that reach over 300 m in elevation. However, the majority of the population is situated on nearshore, low-lying accumulations of reef-derived rubble. In this case, the mostly unconsolidated rubble bank is seldom more than 100 m wide and 1 m above high water and is subject to inundation during wave events. The shores of this low-lying coastal strip are in places subject to significant rates of erosion, and given that the main mechanism for rebuilding the shoreline is cyclones (estimated to be a 1 in 100 year event), the community is in the unenviable position of both fearing the next major cyclone landfall and actually needing it to strike so that a fresh volume of coral rubble can be lifted to the reef platform and replenish the island's shores (of course, the complexities of such events may mean it does not have this 'desired' effect; there are many variables). Work is continuing with the Kosrae authorities to explore options for longer-term adaptation options. The partnership will continue efforts to look towards longer-term adaptation in Kosrae via staged and well-designed resettlement to higher, less vulnerable locations.



Storm ridge



Top left: changes in coastline since 1944. Top right shows back swamp areas (in blue) and the strip of land of current settlement. Bottom diagram summarises key geomorphological issues and vulnerabilities.

EU funded Environmentally Safe Aggregates for Tarawa (ESAT) project, Kiribati

21. Since the early 1990s, the Government of Kiribati has considered establishing an alternative aggregates company to supply its urban construction aggregate needs. The ESAT project follows on from earlier technical work in Tarawa to assist the government to characterise a lagoon basin resource area. The resultant project is jointly implemented by OIP and the Kiribati Ministry of Fisheries and Marine Resource Development (MFMRD). Over the reporting period a number of important milestones have been achieved. In 2012, it was reported that the ESAT project would support a request by the Government of Kiribati for a further allocation of funding from the European Union. In July 2013, the EU confirmed that an additional €2 million would be made available to ESAT to support the initial phase of operations of the Atinimarawa aggregates company. Atinimarawa was established as a state owned enterprise in 2012, and during 2013, ESAT assisted the company in preparing the aggregate stockpiling and processing compound, renovated an associated office complex and started recruitment of key company positions. At the time of writing, a Manager, an Assistant, an Aggregates Dredge Captain and a Chief Engineer have been recruited. A major activity that has consumed large efforts over the course of 2013 has been the overseeing of the completion of the purpose-built dredge vessel the MV *Tekimarawa*. The *Tekimarawa* departed the shipyard in Indonesia on 20 August and was expected to arrive in Tarawa in mid-September 2013.



The MV Tekimarawa undertaking river trials a few days before she set sail to Tarawa.

22. The first phase of an unexploded ordinance survey (UXO) was also completed in the ESAT aggregates resource area. The conditions of the environmental licence to permit aggregate extraction activities in the resource area have also been agreed. ESAT is also in close liaison with the World Bank, which is funding the upgrade of the main road in South Tarawa, a project that requires significant volumes of 'sub-base' material to form the foundation. Whilst the ESAT resource area's coarse sands and gravels are not suitable as a sub-base, ESAT also has a licence to excavate access channels on the intertidal reef flats in Beito and Bonriki. This fine intertidal silt is known throughout the region as an excellent sub-base material and therefore, ESAT has offered this material to the road project to greatly reduce costs of importation as well as reduce the significant quarantine risk related to importation.



Due to the ever growing domestic demand for building aggregate, scenes like this are now tragically common in South Tarawa. (Above) Dozens of bags of harvested gravel stand ready for sale, persistent sand and gravel removal has destroyed this beach system and caused many metres of erosion. (Below left), gravel and sand mining in 2007; (right) the same beach in 2013. Note the complete removal of the high protective berm; potential natural recovery of such damage will take decades.

Progress towards KRA 2: Development, management and governance of natural resources

EU EDF10-funded Deep Sea Minerals in the Pacific Islands Region: a Legal and Fiscal Framework for Sustainable Resource Management project

23. Given that the deep sea minerals (DSM) activities only started in early 2011, the project has made very impressive headway which has continued through the 2012-2013 reporting period. Guided by the *Regional Legislative and Regulatory Framework* (a milestone document completed by the project last year) the DSM project has over the last 12 months prepared a template document for national-level deep sea minerals policy and legislation development. This template can be used by participating countries to develop their respective national deep sea minerals policies in a manner endorsed via the *Regional Legislative and Regulatory Framework* and consistent with international law. During 2013, the DSM project also drafted and delivered the national seabed minerals legislation and regulations for Tuvalu, Niue and Federated States of Micronesia. Additionally, Fiji's International Seabed Minerals Decree is the first in the Pacific to be successfully drafted, reviewed and enacted by government. On request from a number of countries, the project has provided valuable assistance in reviewing and preparing other legal documents relating to deep sea mineral activities. The project also has important capacity building components and continues to implement priority training initiatives. Two regional training workshops have been held in 2013. The first workshop was in Tonga (March) and focused on deep sea minerals law and contract negotiations, and the second, held in Vanuatu in June, was on social impacts of seep sea mineral activities and stakeholder participation, (June). The project provided support for representatives of all 15 Pacific members of the African, Caribbean and Pacific Group of States (ACP) as well as civil society organisation officials to attend these training workshops. The DSM project's legal internship programme has also proven very popular with law graduates and government lawyers. Over the last year, six young Pacific Island lawyers have participated in the internship programme and another four are expected to participate over the next four months.



Above, from left to right: the three main DSM resource types – manganese nodules, cobalt rich crusts and massive sulphide deposits (black smoker vent fields). Below: recent capacity building activities in Vanuatu (June 2013 – workshop on social impacts of deep sea mineral activities and stakeholder participation).

Water Resource Assessments in the outer islands of Kiribati (KIRIWATSAN) Phase 1

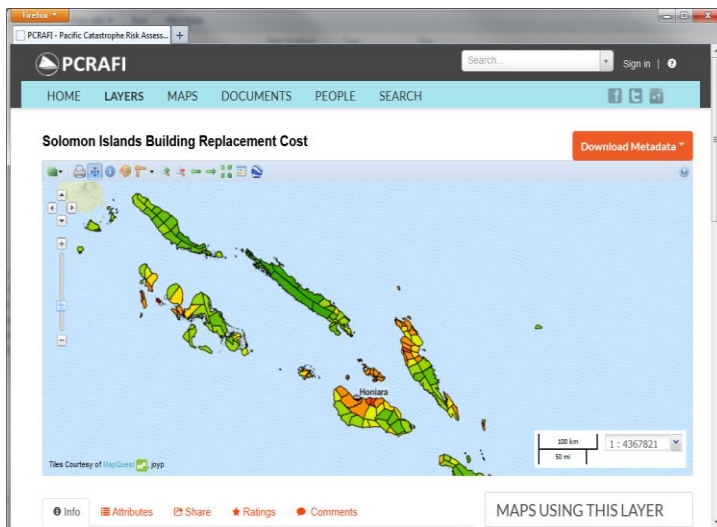
24. Water resource assessment work is being undertaken across 8 islands and 35 villages within the Gilbert Group of islands in Kiribati. As part of this work, groundwater resources are being mapped, rainwater harvesting potential is being identified, and the impacts from inappropriate sanitation practices are being recognised. It is intended that the detailed information resulting from these assessments will be used to provide some preliminary designs to implement improvements for water supply and sanitation during a second phase of the project tentatively scheduled to commence towards the end of 2014 or early in 2015. Many lessons have been learnt from challenges encountered in past projects, including: issues with sustainability of water supply systems for isolated communities requiring expensive repairs or specific skills, and recommendations of infrastructure solutions that involve multiple land areas and landowners and/or changes in traditional land use practices. It is important to acknowledge these issues and recognise that although there are short-term efficiency benefits to the community from such solutions, the long-term end results are often unsustainable or unsupported water supply and sanitation systems. Therefore, the assessment work being undertaken by SPC through the KIRIWATSAN project has been designed to align with accepted practices and encourage financial sustainability in a cash poor society. Working within the constraints of land boundaries, sites for water supply systems ranging from improved household wells to communal water supplies are identified and presented to the community to jointly determine what type of improvements best match their situation with regard to social, economic and environmental considerations. Similarly, a combined approach of understanding the impacts to water quality from existing land use and sanitation practices, and identifying the best location and types of technologies available, will help inform the behavioural change process required to improve sanitation practices. In order to deliver this work, SPC, and UNICEF, have established a KIRIWATSAN project team based in Tarawa to implement the various components of Phase 1 of the project. Whilst there are complexities in supporting a small team in Kiribati, there are invaluable benefits in having this dedicated team to be able to respond to country needs, resolve issues, provide accountability, and

ensure ongoing progress and commitment. UNICEF, which leads the project, has focused on awareness and the Community-Led Total Sanitation (CLTS) approach to improved sanitation, promoting hand washing practices and the adoption of ‘open defecation-free’ communities. SPC is responsible for the water resource assessments and additional technical support to the project. The outputs from the water resource assessments include technical reports and large scale maps, detailed preliminary designs for improved water supplies, a web-based water, sanitation and hygiene (WASH) information database and the training of government counterpart staff in water resource assessment, analysis and reporting. This foundational work under Phase 1 of the project has assisted the Government of Kiribati and SPC in the first stages of securing further funding from the European Union for Phase II, which seeks to continue the work as well as developing infrastructure for water and sanitation improvements.

Progress towards KRA 3: Managing vulnerability and risk

*Increased capacity in country for informed decision-making in the management of vulnerability and risks:
Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) – Phase 3*

25. The Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) has provided Pacific Island countries with disaster risk modelling and disaster risk assessment tools. These have been developed with the financial and technical assistance of a number of partner agencies such as the World Bank, Asian Development Bank, AIR Worldwide, GNS Science New Zealand and Pacific Disaster Center, which have worked with DRP over a two-year period from 2010. One of the project’s deliverables is the Pacific Risk Information System, which contains detailed, country-specific information on assets, population, hazards, and risks; a comprehensive regional historical hazard catalogue and historical loss database for major disasters, country-specific hazard models that simulate earthquakes (both ground shaking and tsunamis) and tropical cyclones (wind, storm surge, and excess rainfall) and risk maps showing the geographic distribution of potential losses for each country. These deliverables provide the basis for a number of disaster risk assessment applications and are available via the online Pacific Risk Information System at pcrafi.sopac.org.

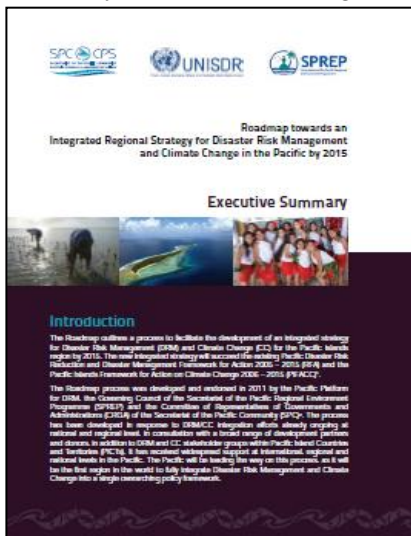


Example of a screen shot output from PCRAFI highlighting building replacement costs in Solomon Islands.

Integrating DRM and climate change to strengthen coordination and facilitate improved service delivery to PICs: Strategy for Disaster and Climate Resilient Development in the Pacific

26. In 2011, the process towards the development of an integrated regional strategy for DRM and climate change was endorsed by the Pacific Platform for Disaster Risk Management, the Governing Council of the Secretariat of the Pacific Regional Environment Programme and the Committee of Representatives of Governments and Administrations of SPC. This process (termed ‘the Roadmap’) outlines the steps to

be taken until 2015 for the development of the strategy, which will come into effect in 2016 and succeed the current separate regional frameworks for DRM and climate change, which expire in 2015. The Roadmap process has been initiated in response to the DRM/climate change integration efforts already underway at national and regional level, in consultation with a broad range of development partners



and donors, in addition to DRM and climate change stakeholder groups within Pacific Island countries and territories. Disaster risk management and climate change response (adaptation and mitigation) share the same aim: to reduce the vulnerability of societies to hazards by improving their ability to anticipate, resist, prepare for, respond to and recover from their impacts. Similar tools are used to monitor, analyse and address adverse consequences of disasters and climate change. Therefore, it is more cost-efficient and effective to consider and implement risk reduction measures in an integrated manner. An integrated DRM/climate change approach, working across all sectors, can make better use of existing national and regional capacities and resources, contribute to improving policy coherence and improve the coordination of donor assisted investments, and will therefore be more effective at reducing risks to sustainable development in the Pacific region. Recognising the cross-cutting nature of

disaster and climate risks, the new strategy under formulation is to be couched within the context of sustainable development. It will therefore be a strategy for promoting disaster and climate resilient development in the Pacific. Activities carried out by AGTD for the Roadmap process since October 2012 include the following:

- DRM and Climate Change Advisor was appointed.
- A technical working group was developed.
- Two Regional Advisors were appointed to provide support in the consultation processes and drafting of the strategy.
- A Roadmap Steering Committee was appointed.
- A cross-SPC workshop for DRM and climate change was designed and delivered in Suva in February 2013.
- The first Joint Meeting of the Pacific Platform for Disaster Risk Management (PPDRM) and the Pacific Climate Change Roundtable was convened in Nadi in July 2013. This was a historic meeting that brought together the two communities of practice for the first time. It was attended by over 300 participants representing a wide variety of stakeholders and interest groups, including Pacific national representatives at different levels of government; NGOs; civil society organisations; the private sector; the scientific community; and regional, international and donor organisations.
- The importance of the Roadmap process was acknowledged within the current reporting of the Pacific Plan Action Committee.

ADDRESSING CROSS-CUTTING INITIATIVES

Gender

27. Gender is mainstreamed throughout the AGTD work programme. One particular example is the Lifuka (Tonga) programme, which was implemented jointly by AGTD and SPC's Human Development Programme. The project addressed a wide range of gender and community issues as part of its effort to understand island vulnerability (to tectonics, water shortages / contamination and storm surge hazards). In addition, DRP has worked this year to study how people with disabilities are affected by disasters.

Food security

28. AGTD's GIS and remote sensing continuously provide support and deliver services in this area in conjunction with SPC's Lands Resources Division. One example is work done on coconut resources in Federated States of Micronesia. Also DRP conducted post-disaster needs analysis work in Fiji to assist with planning to improve food security resilience after future disasters.

Reducing risks/responding to climate change

29. All of DRP's work and much of the work of OIP and WSP focus on these areas. One example is the work on modelling of future tsunamis from the Tonga Trench and the impact they will have on Tongatapu.

Human rights

30. The work of the DSM programme includes extensive awareness raising, education, and consultation with a wide range of NGO and civil society groups with respect to mineral development. It is a human right to be part of societal decisions for significant developmental options, and mining can present particular challenges. The programme's many workshops in Tonga, Vanuatu, Papua New Guinea and Fiji always include major interaction with NGO and human rights organisations.

2013 STAFFING AND BUDGET

	OIP	DRP	WSP	Director's Office	Total
Budget (CFP units)					
Core	520,000	400,000	370,000	973,700	2,263,700
Project	4,112,700	7,325,400	2,370,300	301,400	14,109,800
Number of staff (including vacancies)	26	23	16	20	85

31. Staffing figures for 2013 and 2014 are the same as they take into account recruitments that are 'in the pipeline'. It has been a good year for the division in terms of overall project funding and the scope, delivery and extent of the work programme as described in this report has benefitted from the healthy funding position.
32. In 2013, a number of projects are ending or approaching their end, including DRP programmes relating to national disaster facilities, envelopes B and C of existing EU projects, and the United States Agency for International Development (USAID) DRP training programme. An EU integrated water management programme implemented by WSP is also ending.

2014 WORK PROGRAMME AND BUDGET

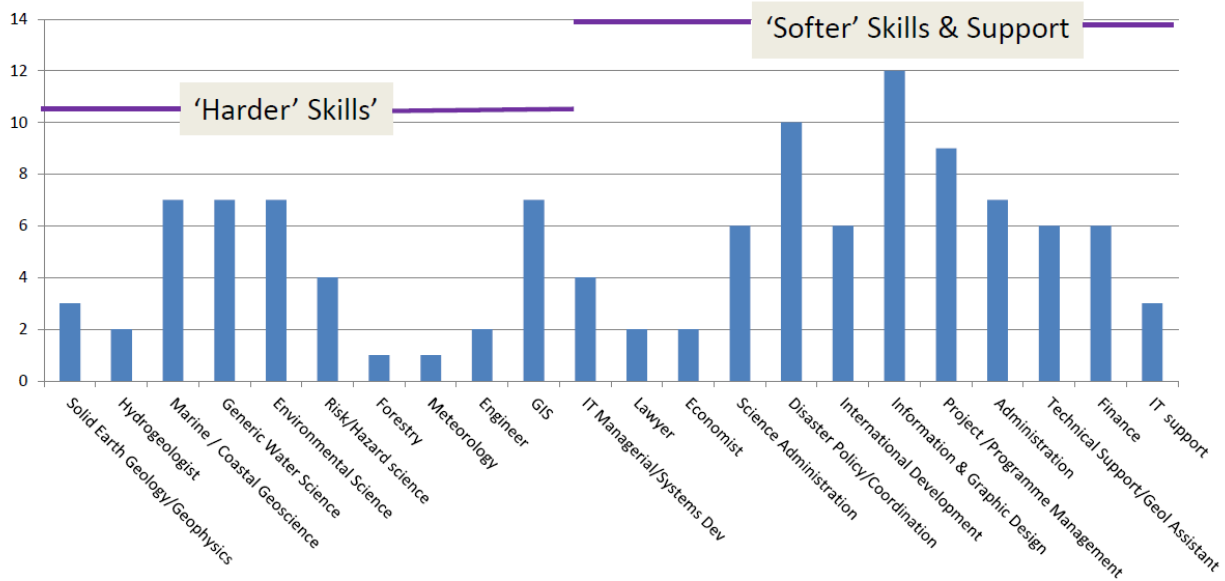
	OIP	DRP	WSP	Director's Office	Total
Total Budget (CFP units)					
Core	486,600	373,700	346,100	870,300	2,076,700
Project	5,568,400	5,413,300	2,569,800	258,100	13,809,600
Estimated number of staff	26	23	16	20	85

33. Funding levels in 2014 are anticipated to fall by 1.4 million CFP units, due to cuts in core funding as well as some project closures. Luckily, new projects will come on-stream, including a 20 million Euro programme for increasing resilience to disaster and risk, a NZD 5 million programme for increasing water security funded by the New Zealand Aid Programme, projects related to understanding Kiribati's Bonriki aquifer, extended funding for the EU ESAT programme (aggregates in Tarawa lagoon), and New Zealand funding for marine surveys at various locations in the region. The staff figures include new disaster and risk advisors, new water modelling personnel, a new environmental advisor for deep sea minerals, a new geologist for the Director's Office, a new economic geologist for the deep sea minerals project and increased support to the technical workshop. Key highlights of the 2014 work programme will include: further development of the DRP climate change agenda; improving resilience across the region to disaster and risk; improving water security in drought prone areas (Marshall Islands, Tuvalu, Kiribati, Tokelau, Cook Islands); integrated water resources management across the region (with new Global Environment Facility funding coming on-stream); oceanographic surveying and wave modelling; further assistance for deep sea minerals throughout the region, and continuing training and expert services in GIS and remote sensing.

FUTURE DIRECTION, OPPORTUNITIES AND CHALLENGES

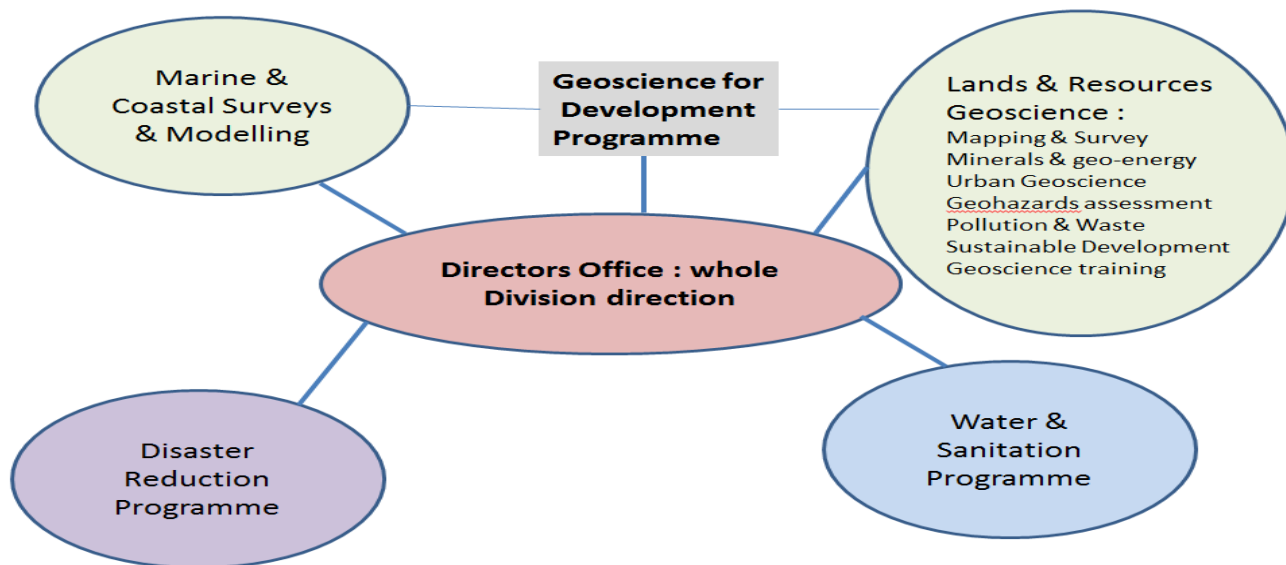
34. At the time of writing the new Director of AGTD has been in the post for eight months. Key focus areas for the Director have included: 1) integrating the division within SPC to maximise whole-organisation synergy and collaboration; 2) meeting with all AGTD staff on a one-to-one basis; 3) meeting with representatives of island member countries; 4) undertaking a skills and scoping analysis of AGTD and benchmarking the results against those from other applied geoscience organisations the Director has worked with (in Asia, Europe, the Americas, Africa and the Pacific); and 5) developing a vision that directly focuses on the Pacific's urgent needs (generating jobs and wealth for the rapidly rising population, assisting with infrastructure and urban development, reducing risk, and enhancing the quality of life and physical environment of Pacific Islanders).
35. The Director notes that AGTD currently has many positions of strength. AGTD has recently signed contracts with key aid donors extending over the next five years, and in coming months it will sign several more. These projects address vital developmental areas (e.g. resilience to hazards and risks and water security) and are worth around USD 50 million. This places the division on a firm foundation and is a testament to the dedication and innovation of SPC staff. Furthermore, there are numerous signs that aid donors may invest in extractive industries and deep sea minerals to an extent not seen in the region for some time. Key strengths of the division include capabilities in the areas of: lagoon, ocean and coastal geoscience; aspects of deep sea minerals; coordination, policy development, planning; management and information delivery for risks and hazards; groundwater, hydrology and water governance and policy; GIS and remote sensing; library, publications and information management; aspects of applied economics and ICT systems development.
36. As a result of the Director's one-on-one meetings with all AGTD staff, the skills and scope of the division were mapped out as shown below.

SOPAC Division Skills: March 2013



37. One surprising finding for an ‘applied geoscience’ division was that there were only four geologists (including the Director). Furthermore, compared to most applied geoscience organisations in the world, it is evident that the division has little or no capability in some key areas of geoscience for development, particular relating to the on-land environment. Examples of these skill areas include economic geology, mapping and surveying geology, urban geoscience, engineering geoscience, waste and pollution studies, geohazard geoscience, geoscience training, geoscience for sustainable and inclusive development, etc. Discussions with a wide range of island countries have indicated that there is widespread concern that AGTD cannot offer assistance in these vital developmental areas. As a result of the lack of AGTD capability, island members and the division itself ‘contract-in’ the skill they need. Whilst AGTD will never be able to offer a complete range of services and will always depend on partners and specialists to some degree, it is advisable that AGTD develop at least a minimum level of capability – preferably more – in the areas mentioned above.
38. Although still a work in progress, a preliminary new possible structure is proposed below that aims to fill the identified skill gaps and rebalance AGTD in a way that: 1) is more able to meet the highest-level geoscience-related developmental needs; 2) rebalances the science: policy ratio of the division; 3) maintains its excellent capability to turn science into policy; 4) is better fitted to emerging needs and challenges; 5) is better aligned with the scope and capability of other modern international applied geoscience organisations; and 6) is better placed to collaborate and innovate with the whole of SPC, the PICT membership, other regional agencies and international partners (both aid partners and other geoscience organisations). These changes will have little immediate impact on the existing DRP and WSP, except that these programmes will be better serviced internally by strengthened AGTD science capability. The current Ocean and Islands Programme will change its name (the current suggestion for a new name is ‘Geoscience for Development’) and, at least initially, will comprise what is now Ocean and Islands (basically marine and coastal geoscience) *plus* a new Lands and Resources Geoscience Unit. Further in the future, these two parts may separate, depending on future funding and opportunities. Core funding for the division will start to develop the new capability, but new project and donor funding will also be needed to fully activate the vision.

Proposed New AGTD Organisational Structure



39. Some progress has already been made in developing the above structure: two new recruits with a strong background in geology and coastal and groundwater modelling skills have been appointed to OIP and DRP; a new Pacific Islander intern geologist has been appointed to the deep sea minerals project, the first for many years; a mapping and surveying geologist will be appointed to the Director's Office to assist in moving the vision forwards; the mid-term review of the existing divisional strategic plan will further develop and inform the vision; a new KRA will be devised that measures progress in enhancing divisional science capability within three years; and finally a concept note (below) has been agreed as a partnership between SPC and the University of the South Pacific that develops a brand new earth science course with an official higher education diploma status. Future graduates will help strengthen the skill sets of AGTD as well as ministries and the private sector in PICTs, benefiting the region as a whole. The five-year programme has been costed at between NZD 700,000 and 900,000, and the division is seeking funding.

Example of new strategic plan development: Proposal for a diploma in earth sciences

A joint University of the South Pacific (USP) and SOPAC Division of SPC initiative

Rationale: Earth science knowledge and skills in the Pacific region are weak and many areas of development and planning (infrastructure, minerals, energy, waste disposal, disaster and risk, urban planning) suffer because of this lack of capacity. This proposal targets decision-makers in key ministries (mines, industry, planning, disaster and risk, climate change, energy, finance, law) as well as civil society and possibly the private sector with the aim of up-skilling them in key areas of knowledge and skills needed for policy development. The course will also be designed to encourage peer-to-peer support in the longer term between ministries across the region, with USP and SOPAC acting as hubs of expertise and further encouragement. The development of this network will assist both USP and SOPAC in their regional capability and research and development activities.

History: The 1970s-1990s saw significant capacity building support to the geological survey functions of government in PNG, Solomon Islands, Vanuatu and Fiji. Furthermore an earth sciences course ran in the 1990s for around 10 years that strengthened skills at a range of levels and led to the development of a strong supportive network in the region. Many students have gone on to postgraduate qualifications and senior government positions. The 2000s to the present day have seen a general decline in geological and earth science skills in the region, as the external donor support (and the original course) ended. The current Director of SOPAC Division of SPC is attempting to rebuild these skills within SOPAC and the region. The development of a new updated course of relevance to the region is seen as an important new element in targeted capacity building.

Course structure: The course will lead to a formal USP diploma and will have to fulfil USP regulations for this. 10-15 people from across the Pacific region will be selected on the basis of need and appropriateness, mainly from the civil service. These people will form a cohort who will study for several months a year over period of two years. The students will be in Fiji for their study period, (anticipated to be 3–4 months) and will be fully assessed during their time in-country.

Management and course delivery: If successful, this project would appoint a PhD-level geoscientist with a skill set that includes teaching ability within a developmental context for adult learners. This person would be a training coordinator, organise the selection of candidates from various countries, take care of logistical arrangements for students in-country, develop course curricula and liaise with existing lecturers for current courses, deliver around 50% of the course and liaise with SPC member countries.

Project duration: The project would run initially for five years (one year preparation and planning, two cohorts of students x two years each).

Outputs: 30+ up-skilled decision-makers; a diploma course that can run for many more years, depending on funding; a peer network of strengthened policy personnel.

Costs: Salary of one USP lecturer for 5 years (NZD 300,000); flight costs and in-country expenses for 15 students for four months per year for four years (NZD 400,000).

RECOMMENDATIONS

40. CRGA is invited to:

- i. Consider the Director's report on his first eight months in the position (paragraphs 34-39 and the proposal for an earth science course) and provide feedback. The Director seeks a CRGA mandate for his suggested way forwards for AGTD.
 - ii. Note the division's results and its progress towards the KRAs in its strategic plan.
 - iii. Note the outline of the 2014 staffing budget and work programme.
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NATIONAL WORK IN 2013

FRANCOPHONE COUNTRIES

Programme	Strategic Objective	Planned Output	Status
French Polynesia			
Disaster Reduction	Vulnerability and risks managed	Study completed on the risk of cyclonic swells in the Tuamotu archipelago, including collection of oceanographic data, development of cyclonic swell models, and the production of inundation maps – also included economic analysis to outline costs and benefits of risk-reduction options (sea wall versus building elevation versus no-construction zone) completed to inform building regulations	Completed
		Regional cross-learning and experience sharing between Pacific country governments facilitated through increased participation in regional disaster management and water/sanitation networks and platforms, and access to region-wide information tools – supported participation in 2013 regional meetings; 28 new Overseas Countries and Territories (OCT) documents uploaded to Pacific Disaster Net with a redesign to allow for French interface; Water Safety Planning workshop with regional partners (World Health Organisation, SPC), as well as OCT and Pacific Island countries and territories	Completed
		Risk prevention plans revised based on additional data emerging from risk assessments in the Tuamotu archipelago	On Track
Marine, Coastal, Science and Survey	Vulnerability and risks managed	Coastal terrain models and wave inundation numerical models completed to improve geospatial baselines for atolls in the Tuamotu Archipelago, leading to reduced risk to cyclone; inundation maps and assessments produced to inform decision making – Numerical modelling to produce guidance on cyclonic wave impacts and inundation on five atoll island locations; Reports released (Oceanographic Data Acquisition Cyclonic Wave Inundation Modelling in five islands and Multibeam Survey of Rangiroa Atoll)	Completed
Natural Resource Economics	Vulnerability and risks managed	Preliminary economic assessment completed on adaptation options on Rangiroa	On Track
New Caledonia			
Disaster Reduction	Vulnerability and risks managed	Water infrastructure contamination- proofed per safety plans in nine municipalities – the nine municipalities of La Foa, Farino, Sarramea, Moindou, Touho, Hienghene, Poum, Ouvea and Bourail have completed the implementation of their water safety plans, resulting in water infrastructure contamination-proofed from collection to distribution	Completed
		Water safety plans developed in six municipalities – water safety plans completed in five municipalities: Canala, Voh, Kone, Pouembout and Lifou	Completed
		Studies and field work conducted to increase knowledge of water users, available water resources, projected water needs, and options for increasing water supply – studies completed; Modelling of the Pouembout water table, differential gauging of the Kone river, water borehole installation throughout the Voh water network, and a cost-benefit analysis of solutions to meet future water demands	Completed
		Options for institutional arrangements (wastewater management) identified with retention of most promising solution – feasibility study completed which offered several scenarios for the new sanitation agency, of which one was retained (Groupement d'Interet Public)	Completed

Programme	Strategic Objective	Planned Output	Status
Disaster Reduction (cont'd)	Vulnerability and risks managed (cont'd)	Measures to increase access to water implemented in Northern province; collaborative water governance structure developed in Voh-Kone-Pouembout with measures in place to improve access to water – Voh-Kone-Pouembout water management committee fully operational; measures being developed based on study outputs, such as the testing of new, water-saving agricultural practices (agriculture being the largest user of water resources) in the Voh-Kone-Pouembout zone	On Track
		Regional cross-learning and sharing of experience between Pacific country governments facilitated through increased participation in regional disaster management and water/sanitation networks and platforms and access to region-wide information tools – supported participation in 2013 regional meetings; 28 new OCT documents uploaded to Pacific Disaster Net with a redesign to allow for a French interface	Completed
		Capacity building promoted through study tours and training – Water Safety Planning workshop; tsunami preparedness workshop; study tours for public health experts to learn about health risks linked to asbestos/air pollution and recreational water safety; two study tours on water management	Completed
DRM Training and Capacity Building	Vulnerability and risks managed	Pacific Disaster Risk Management Programme courses conducted	On Track
Vanuatu			
DRM Policy and Planning	Vulnerability and risks managed	Risk insurance pilot conducted	On Track
Water Resources	Vulnerability and risks managed	Sarakata Basin Integrated Flood Management Plan established	Completed
		Community engagement with national Government on water issues increased – Sarakata Basin communities adopting appropriate land use strategies to protect water source	On Track
		Successful trials of sustainable forest and land management practices with landowners – Memorandum of Agreements with Government Forestry and Agriculture Departments have established demonstration projects on appropriate Land and Forestry use	Completed
Water and Sanitation Services	Vulnerability and risks managed	Drinking Water Safety Planning training provided through the World Health Organisation – 18 participants from Vanuatu received trained as facilitators	Completed
Wallis Futuna			
Disaster Reduction	Vulnerability and risks managed	Study completed on tsunami hazard, including at-risk zones	Completed
		Improved disaster management capabilities due to tsunami hazard study; disaster management plans updated, disaster response equipment procured, public information materials developed, and government staff trained – Government and first response staff trained, additional early warning equipment procured (high frequency radios, tsunami sirens, tsunami signage), information materials revised (television spots and brochures)	Completed

ANGLOPHONE COUNTRIES

Programme	Strategic Objective	Planned Output	Status
Cook Islands			
DRM Training and Capacity Building	Vulnerability and risks managed	Disaster Risk Reduction (DRR) and evacuation Centre Management Training conducted – 24 people trained on DRR and 25 people trained on emergency evaluation centre management	Completed

Programme	Strategic Objective	Planned Output	Status
Information Management / Pacific Disaster Net		National stocktake of Disaster Risk Reduction interventions completed – DRR/Climate Change Project Portal launched in April 2013; strengthened accessible data on DRR and climate change projects to support planning and implementation of activities and collaboration thus contributing to DRR and development planning	Completed
Marine, Coastal, Science and Survey	Natural resources developed and managed and governance strengthened	Detailed bathymetric map of Manihiki Lagoon completed; support provided to on-going work to upgrade lagoon water quality monitoring buoys – Bathymetric maps delivered. Buoy sensor repair/replacement and calibration underway now; once completed the buoy will be shipped and deployed	Completed
		Additional model runs of the Aitutaki boat channel undertaken to facilitate improved design and decision-making – work in planning now	On Track
Regional Maritime Boundaries Sector	Natural resources, systems, and processes monitored and assessed	Maritime boundaries data, support and advice provided to allow Pacific Island countries and territories to develop their technical/legal solutions in a manner consistent with the UN Convention on Law of the Sea, 1982; Pacific Island countries and territories supported lodge of their boundaries data – baseline verification work on-going and new satellite imagery has been ordered to complete this task; two-week attachment organised to complete work at the Oceans and Islands Programme	On Track
Federated States of Micronesia			
DRM Policy and Planning	Vulnerability and risks managed	National Disaster Risk Management and Climate Change Policy developed	Completed
Risk Reduction	Vulnerability and risks managed	National Emergency Operation Centre constructed to strengthen early warning communication systems	Completed
		92 very high frequency radios supplied and installed in outer islands to strengthen early warning communication systems	Completed
Regional Maritime Boundaries Sector	Natural resources, systems and processes, monitored and assessed	Maritime boundaries data, support and advice provided to allow Pacific Island countries and territories to develop their technical/legal solutions in a manner consistent with the UN Convention on Law of the Sea, 1982; Pacific Island countries and territories supported lodge of their boundaries data – technical assistance provided; Oceans and Islands Programme will continue to assist the Federated States of Micronesia with its shared boundary arrangements and broader baseline and boundaries work	On Track
Water Resources	Vulnerability and risks managed	Riparian zone main water supply in Nett Watershed protected and rehabilitated – Nett Municipality endorsed the establishment of its watershed boundaries to protect 1,700 hectares of watershed	On Track
		Sustainable forest and land management practices established and trialled with landowner – 40 EcoSan composting toilets on piloted Funafuti	Completed
		Routine water monitoring strengthened – Water quality monitoring and analysis procedures established and supported via routine information and data collection by Pohnpei Environmental Protection Agency	On Track
	Natural resources developed and managed and governance strengthened	Joint Resolution of President and State Governors passed endorsing the first framework for National Water and Sanitation Policy	Completed

Programme	Strategic Objective	Planned Output	Status
Marine, Coastal, Science and Survey	Vulnerability and risks managed	Coastal rehabilitation report reviewed; Historical image analysis completed; Recommendations presented for coastal adaptation actions in Kosrae – Field work completed and National Institute of Water and Atmospheric Research (NIWA) generating the updated Coastal Management Plan. Oceans and Islands Programme travelled to New Zealand to work with NIWA to undertake the historical image analysis, Geographic Information System files for two temporal layers completed	On Track
Fiji			
DRM Policy and Planning	Vulnerability and risks managed	Joint Climate Change and Disaster Risk Reduction National Action Plan developed	On Track
DRM Training and Capacity Building	Natural resources, systems, and processes monitored and assessed	Accredited training programme developed in partnership with relevant tertiary institutions – The Graduate Certificate in Disaster Risk Management is now available through Fiji National University; SPC is providing technical support in the writing of course material; Two of four units have been completed and students are now enrolled in the program	Completed
	Vulnerability and risks managed	Evacuation Centre Management and exercise management training conducted – 19 people trained on evacuation centres and 19 trained on exercise management	Completed
		Introduction to Disaster Management and Initial Damage Assessment courses conducted – 19 people trained	Completed
Risk Reduction	Natural resources developed and managed and governance strengthened	2D flood inundation model, flood hazard and risk maps developed and used to recommend flood mitigation measures and dissemination of the methodology to the Pacific region – Inception report for flood modelling for Nadi submitted by the consultants, National Institute for Water and Atmospheric Sciences, New Zealand	On Track
Marine, Coastal, Science and Survey	Natural resources developed and managed and governance strengthened	Training and workshops on economic capacity building for farmers provided to strengthen the pearling industry	On Track
	Natural resources, systems and processes monitored and assessed	Wave energy data collected to support renewable energy and adaptation option decision-making – one wave gauge deployed, multibeam and seismic data collected and reef platform drilling completed; three current profilers and three tide and wave recorders deployed and retrieved	Completed
Regional Maritime Boundaries Sector	Natural resources, systems, and processes monitored and assessed	Maritime boundaries data, support and advice provided to allow Pacific Island countries and territories to develop their technical/legal solutions in a manner consistent with the UN Convention on Law of the Sea, 1982; Pacific Island countries and territories supported lodge of their boundaries data – on-going technical assistance provided; completion of Fiji's revised Archipelagic baseline; computation of 12, 24 and 200 NM limits and median line with Solomon Islands and Tuvalu; mapping and marine spatial planning support for Deep Sea Minerals decree for activities in the area	On Track
Water Governance	Vulnerability and risks managed	Technical assistance to the development of National Groundwater Management Policy	Completed

Programme	Strategic Objective	Planned Output	Status
Water Resources	Natural resources developed and managed and governance strengthened	Two degraded areas in the catchment area rehabilitated and successful trials of sustainable land and forest management practices with landowners completed – to date, about 60 hectares of the area have been rehabilitated with fruit trees and staple food trees, such as coconut and breadfruit trees	On Track
Water and Sanitation Services	Natural resources developed and managed and governance strengthened	Support provided to Water Authority of Fiji towards accreditation – lab water quality manual developed and Water Authority of Fiji in process of implementing recommendations suggested	On Track
Remote Sensing and GIS	Natural resources, systems and processes monitored and assessed	Foresters of Fiji Forestry Department can utilise Quantum Geographic Information System software	Completed
		Geographic Information System training completed	On Track
Geology, Minerals and Hydrocarbon	Natural resources, systems and processes monitored and assessed	Sigatoka offshore mineral resources assessment completed	Completed
Kiribati			
Marine, Coastal, Science and Survey	Natural resources, systems, and processes monitored and assessed	Vulnerability assessment of the Bonriki freshwater reserve and international airport completed to improve understanding of coastal hazards and climate variability and change, as well as water resource and coastal management issues – project introductory meetings undertaken in Tarawa, current and wave metres deployed at study site, Real Time Kinematic Global Navigation Satellite System survey undertaken at study site	On Track
Regional Maritime Boundaries Sector	Natural resources, systems, and processes monitored and assessed	Maritime boundaries data, support and advice provided to allow Pacific Island countries and territories to develop their technical/legal solutions in a manner consistent with the UN Convention on Law of the Sea, 1982; Pacific Island countries and territories supported lodge of their boundaries data – visit (February 2013) to undertake baseline verification work, coordinate extraction work underway now; assist Kiribati with shared boundary arrangements with the USA. Oceans and Islands Programme/Forum Fisheries Agency help a treaty negotiation meeting between Kiribati and USA (May 2013)	On Track
Natural Resource Economics	Natural resources developed and managed and governance strengthened	Cost Benefit Analysis workshop in relation to Climate Change Adaptation held	On Track
Water and Sanitation	Vulnerability and risks managed	Improved social and economic development in the Outer islands through increased access to safe and sustainable drinking water and sanitation in at least 35 out of 139 villages in 16 Gilbert Group islands – Scoping works undertaken with in-country counterparts for project design and submission	On Track

Programme	Strategic Objective	Planned Output	Status
Water Resources	Natural resources developed and managed and governance strengthened	Visual materials developed of preliminary water and sanitation design options per village and publication of assessment results supported by stakeholder discussions in related KIRIWATSAN I community – large scale rectified satellite images produced for planning and assessment, provided to island council, Ministry of Public Works and Utilities and project staff; development of web-based information accessible and updatable by many for sharing of water resource information	On Track
	Vulnerability and risks managed	On-the-job technical guidance and targeted training and capacity-building to assigned Ministry of Public Works and Utilities staff, including all water technicians on key elements of water resources assessments, analysis and reporting – five outer-island water technicians trained during site assessment work in rain gauge data recording, use of Global Position Systems, and water quality equipment, survey techniques, including well and Rain Water Harvesting and Electromagnetic 34 geophysics	On Track
		Ministry of Public Works and Utilities staff and water technicians training provided on key elements of water resources assessments, analysis and reporting – three Ministry of Public Works and Utilities staff and one UNICEF staff trained in water resource and survey work; Ministry of Public Works and Utilities staff trained in analysis and data entry	On Track
	Natural resources, systems, and processes monitored and assessed	Eight Island Level Groundwater and rainwater harvesting assessments in a minimum of 35 villages of the Gilbert Group outer islands documented – assessments complete on five islands, one draft report, other reports delayed, data sets uploaded	Completed
	Natural resources developed and managed and governance strengthened	Preliminary Designs developed for abstracting and capturing water for household and/or public use and provided to project counterparts in Kiribati for consideration – preliminary designs provided to UNICEF and country for consideration in summary presentations	On Track
Remote Sensing and GIS	Natural resources, systems, and processes monitored and assessed	Geographic Information Systems training completed	Completed
Marine, Coastal, Science and Survey	Natural resources, systems, and processes monitored and assessed	Advisory service provided on geodetic science and survey task areas – two-week Real Time Kinematic Global Navigation Satellite System training undertaken in Tarawa with Ministry of Public Works, Ministry of Fisheries and Ministry of Environment staff	On Track
		Hydrographic and magnetic surveys undertaken in the Environmentally Safe Aggregates for Tarawa Project aggregates resource area, Beitio Port and port approaches survey completed – field work from Phase I complete; technical reports drafted; results presented at Unexploded Ordnance workshop Brisbane; wreck and potential ordnance locations archived and shared with Kiribati Government, New Zealand and USA dive teams	On Track
Marine, Coastal, Science and Survey	Natural resources, systems, and processes monitored and assessed	On-going advisory service provided in the area of improved marine and geo-science decision-making and planning – Coastal development plans and alternate sand mining locations reviewed for Tarawa, Kiribati	Completed

Programme	Strategic Objective	Planned Output	Status
Marshall Islands			
DRM Policy and Planning	Vulnerability and risks managed	Draft climate change and disaster risk reduction Joint National Action Plan developed	On Track
		Risk insurance pilot conducted	On Track
DRM Training and Capacity Building	Vulnerability and risks managed	Introduction to Disaster Management course conducted – 17 people trained	Completed
Risk Reduction	Vulnerability and risks managed	580 rainwater catchments installed for households in Majuro and 70 catchments for outer-islands to improve access to clean drinking water – approximately 3,000 additional people have access to clean drinking water	Completed
	Natural resources, systems, and processes monitored and assessed	Drought Assessment completed	Completed
Regional Maritime Boundaries Sector	Natural resources, systems, and processes monitored and assessed	Maritime boundaries data, support and advice provided to allow Pacific Island countries and territories to develop their technical/legal solutions in a manner consistent with the UN Convention on Law of the Sea, 1982; Pacific Island countries and territories supported to lodge their boundaries data – visit to assess existing data to support baseline development (April 2013); data collected under review and additional satellite imagery to be purchased; an attachment is being organised at the Oceans and Islands Programme to start baseline work	On Track
Water Governance	Natural resources developed and managed and governance strengthened	Increased community engagement with national government on water issues through the establishment of the Laura Lens committee – committee assisted with developing a common understanding and trust between the community, with an average 12 community leaders meeting on a quarterly basis with government	Completed
		Draft water safety plan developed and its implementation revitalisation by new Environmental Protection Authority administration in order to increase the number of people with access to water	Completed
Water Resources	Natural resources developed and managed and governance strengthened	On-going support and advice provided to Marshall Islands, Water, Sanitation and Hygiene Cluster, International Federation of the Red Cross and UN Office for the Coordination of Humanitarian Affairs for 2013 Marshall Islands drought	Completed
		Commercial piggeries converted/introduced to reduce pollution in Laura groundwater – 1 commercial piggery (up to 100 pigs) in the Laura area converted from wash down system to waterless; dry litter pig waste compost system introduced; additional 20 household dry litter (waterless) pig pens piloted in Laura community	On Track
		National Water and Sanitation Policy drafted with supporting implementation/action plan under development; plan to seek cabinet approval during Quarter 3, 2013	On Track
Water and Sanitation Services	Natural resources developed and managed and governance strengthened	Pre-audit support provided to Marshall Islands Environmental Protection Laboratory – three staff based at Environmental Protection Authority certified to carry out water quality monitoring and lab-based testing	Completed
Marine, Coastal, Science and Survey	Vulnerability and risks managed	Rapid assessment of coastal infrastructure and erosion issues completed	Completed

Programme	Strategic Objective	Planned Output	Status
Nauru			
Risk Reduction	Vulnerability and risks managed	Guttering to improve rainwater collection supplied and installed, targeting 150 households – approximately 1,300 people have better access to water	Completed
Water Governance	Vulnerability and risks managed	Technical assistance provided to support the national water and sanitation policy framework and implementation plan	Completed
Water Resources	Natural resources, systems, and processes monitored and assessed	Sewage pollution in Ewa and Anetan communities reduced – secondary filtration established in pilot community septic systems	Completed
		Increased proportion of community engaged in water related issues – community consultation groups established and represented on National Steering Committee; this mechanism now used by other sectors	On Track
		Reduction in use of freshwater for sanitation purposes due to installation of composting toilets – eight compost toilets established in two pilot schools with an estimated 30% reduction in water usage	Completed
Niue			
DRM Policy and Planning	Vulnerability and risks managed	Draft climate change and disaster risk reduction Joint National Action Plan developed	On Track
Water Resources	Natural resources developed and managed and governance strengthened	Niue Water Act enacted	Completed
		Increased population with access to safe drinking water – existing tank replaced with two new 240 kL storages; storage increased by over 45%, leakage reduced	Completed
		Drinking water resource pollution reduced – national collection and disposal mechanism established; 56% of national waste oil has been collected and stored in safe containers and shipped to New Zealand for recycling and/or safe disposal	Completed
		Establishment and implementation of National and Village Drinking Water Safety Plans to provide safe drinking water to all central areas in Niue – 450 people of Alofi are receiving safe drinking water	Completed
Water and Sanitation Services	Natural resources developed and managed and governance strengthened	Technical assistance provided as requested in the area of water quality monitoring – Niue's Public Health laboratory and Public Works Department staff received hands-on training on water quality monitoring, procedures; equipment needs assessed	Completed
Marine, Coastal, Science and Survey	Natural resources, systems, and processes monitored and assessed	Geophysical survey and drilling completed to support port infrastructure development and main wharf facility upgrade – 19 boreholes drilled with 62 m core returned for analysis; bathymetric data collected and processed; oceanographic and climate data collected; oceanographic data sets being used for numerical modelling to determine performance in different wave conditions	Completed
Palau			
DRM Policy and Planning	Vulnerability and risks managed	Joint climate change and disaster risk reduction National Action Plan developed	On Track
Regional Maritime Boundaries Sector	Natural resources, systems, and processes monitored and assessed	Maritime boundaries data, support and advice provided to allow Pacific Island countries and territories to develop their technical/legal solutions in a manner consistent with the UN Convention on Law of the Sea, 1982; Pacific Island countries and territories supported lodge of their boundaries data – collaborative work with Forum Fisheries Agency to support Palau's shared boundary negotiations	On Track

Programme	Strategic Objective	Planned Output	Status
Water Resources	Natural resources developed and managed and governance strengthened	Increase in proportion of community engaged in water-related issues in Ngerikiil – estimated 60% increase in awareness and willingness to protect watersheds achieved through community outreach focused on the importance of water and how best to manage and conserve it	Completed
		Baseline sanitation and pollutant survey undertaken at Ngerikiil River covering ridge to the Airai Bay – routine monitoring of river water quality strengthened through project to ensure safety baselines are met and to inform efforts to remediate pollutant source sites	Completed
		Increased amount of land protected and rehabilitated in the Ngerikiil catchment – entire Ngerikiil watershed managed as watershed conservation area, with national commitment of financial support for including replication and scaling-up of re-vegetation efforts and invasive species removal pilot activities	On Track
Pitcairn			
Disaster Reduction	Vulnerability and risks managed	Monthly rainfall, groundwater and spring water measurements collected and analysed to inform agricultural and water consumption needs	On Track
		Water tanks procured and water harvesting improved to increase emergency water reserves – 100 flower pot tanks as well as downpipes procured, with shipment to Pitcairn and installation initiated in five pre-selected sites	Completed
Papua New Guinea			
Risk Reduction	Vulnerability and risks managed	Automatic Weather Station supplied and installed in Bouganville to improve capacity of National Weather Service to monitor weather patterns with extended coverage	Completed
		High Frequency and Very High Frequency radios supplied and installed in all Provinces to improve communication between Provincial Disaster Committees and National Government to better coordinate disaster-related activities	Completed
		10 seismic stations supplied and installed in selected provinces to monitor seismic activity and strengthen early warning capacity	Completed
Regional Maritime Boundaries Sector	Natural resources, systems, and processes monitored and assessed	Maritime boundaries data, support and advice provided to allow Pacific Island countries and territories to develop their technical/legal solutions in a manner consistent with the UN Convention on Law of the Sea, 1982; Pacific Island countries and territories supported lodge of their boundaries data – review and verification of Papua New Guinea/Australia treaties and National Seas Act; completion of schedule of coordinates and chart for Papua New Guinea's marine zones	On Track
Marine, Coastal, Science and Survey	Natural resources, systems, and processes monitored and assessed	Improved baseline data for managing sedimentation issues on the Yonki hydroelectric dam collected – work design and mobilisation/planning underway now	On Track
Samoa			
DRM Policy and Planning	Vulnerability and risks managed	Risk insurance pilot conducted	On Track
DRM Training and Capacity Building	Vulnerability and risks managed	Emergency Operation Centre training conducted – 19 people trained	Completed

Programme	Strategic Objective	Planned Output	Status
Water Resources	Natural resources developed and managed and governance strengthened	Watershed Conservation Policy to guide legislation to reserve upland areas for water resource conservation developed – Watershed Conservation Policy completed and endorsed	Completed
		Ground rehabilitation works (such as tree planting around the sources and water intakes to improve water quantity and quality) completed to improve water quality	On Track
		Protection of land for inclusion in land reserve to reduce stress on water systems – the Samoan Government purchased ~1500 hectares of upland catchment from the catholic church for designation as watershed protection area	Completed
		Watershed Management Plans that define buffer zones and natural reserves finalised – 4 Watershed Management Plans finalised, covering all watersheds of Apia catchment	Completed
		Increase in population with access to improved sanitation – The Waste Water Treatment Plant in Sogi is operational and is currently upgrading its capacity to include other new buildings around the urban area. There is also Sludge Facility at Tafaigata for the rest of the toilet waste disposal	Completed
	Vulnerability and risks managed	Water Sector support to development of regional application of post disaster needs assessment methodology – support provided for the development of a post disaster needs assessment for the impacts of Cyclone Evan	Completed
Marine, Coastal, Science and Survey	Natural resources, systems, and processes monitored and assessed	On-going advisory service provided in the area of improved marine and geo-science decision-making and planning – Reviewed Terms of Reference for the Samoa Coastal Development Engineer	Completed
Solomon Islands			
DRM Policy and Planning	Vulnerability and risks managed	National Disaster Risk Management and Climate Change Policy developed	On Track
		Risk insurance pilot conducted	On Track
DRM Training and Capacity Building	Vulnerability and risks managed	Evacuation Centre Management training conducted – 26 people trained	Completed
Risk Reduction	Vulnerability and risks managed	Two Provincial Emergency Operation Centres (EOC) constructed to strengthen early warning communication systems – the Makira/Ulawa, Temotu and Western Provincial Governments have a dedicated EOC to improve coordination with the National EOC in Honiara	Completed
Regional Maritime Boundaries Sector	Natural resources, systems, and processes monitored and assessed	Maritime boundaries data, support and advice provided to allow Pacific Island countries and territories to develop their technical/legal solutions in a manner consistent with the UN Convention on Law of the Sea, 1982; Pacific Island countries and territories supported lodge of their boundaries data – completed archipelagic baseline; computation of 12, 24 and 200 NM limits; computation of Solomon Islands/Fiji median line	On Track
Water Governance	Vulnerability and risks managed	Technical assistance provided in the area of integrated water resource management through the collaborative development of a national Integrated Water Resources Management Policy and Implementation Plan	Completed
Water Resources	Natural resources developed and managed and governance strengthened	Increased staff capacity to implement integrated water resource management activities – staff engaged in the development of new national Integrated Water Resources Management Policy; one staff has completed Graduate Certificate in Integrated Water Resources Management	On Track
		Increased proportion of the community engaged in water issues – communities in the Kovi and Kongulai catchments engaged in consideration of catchment preservation for ecological services and improved water quality	On Track

Programme	Strategic Objective	Planned Output	Status
Remote Sensing and GIS	Natural resources, systems, and processes monitored and assessed	Image pre-processed for atmospheric and geometric correction in the Solomon Islands and for Geographic Information Systems image backdrops	Completed
		Geographic Information Systems training completed	On Track
Tokelau			
Water Governance	Natural resources developed and managed and governance strengthened	Drinking water safety and water quality improved – Water, Sanitation and Hygiene Training of Trainers, including introduction on drinking water safety planning and water quality monitoring carried out in Apia with representatives from all atolls in Tokelau	Completed
		Tool kit on Drinking Water, Safety planning and Water, Sanitation and Hygiene developed in local language for dissemination and use	Completed
	Vulnerability and risks managed	National Water, Sanitation, and Climate Outlook drafted – draft summary of Tokelau's Water, Sanitation and Climate Change developed	On Track
Water Governance	Natural resources, systems, and processes monitored and assessed	Water resources monitoring and assessment for longer-term water security strengthened – Rain Water Harvesting systems, Geographic Information Systems survey and capacity building and training is ongoing; rainwater gauges including software has been purchased for installations	On Track
Tonga			
DRM Policy and Planning	Vulnerability and risks managed	Risk insurance pilot conducted	On Track
DRM Training and Capacity Building	Vulnerability and risks managed	Introduction to Disaster Management training conducted in Ha'apai and Vava'u	Completed
Risk Reduction	Vulnerability and risks managed	Electric submersible pumps installed in five villages on Tongatapu to improve access to clean drinking water – more efficient extraction of water from boreholes at five villages on Tongatapu; reduced risk of contamination of water lens	Completed
Risk Reduction	Vulnerability and risks managed	Good water management practices promoted through training and awareness – four workshops on water targeting community groups in Vava'u, Ha'apai, Eua and Tongatapu were held; approximately 200 participants benefitted	Completed
Marine, Coastal, Science and Survey	Vulnerability and risks managed	Improved inundation model for Nukualofa Tonga developed and broad range of baseline data collected to support tsunami inundation modelling and subsequent evacuation mapping to improve understanding of tsunami vulnerability – new bathymetric model of Tongatapu developed; tsunami inundation modelling completed, inundation maps generated; workshop undertaken to assist with tsunami response plan for Nukualofa; sensitivity analysis of varying bathymetric baseline data completed	Completed
		Technical survey and assessment completed to support reduced vulnerability and improved adaptive planning on the western shores of Lifuka Island – all field work and Technical Reports and assessments completed and submitted (Shoreline Assessment, Oceanographic Assessment, Beach Sediment Assessment, and Benthic Habitat Assessment; Coastal Hazards Report)	Completed
	Natural resources developed and managed and governance strengthened	Training on half-pearl seeding technique provided to farmers to strengthen the pearling industry	On Track

Programme	Strategic Objective	Planned Output	Status
Regional Maritime Boundaries Sector	Natural resources, systems, and processes monitored and assessed	Maritime boundaries data, support and advice provided to allow Pacific Island countries and territories to develop their technical/legal solutions in a manner consistent with the UN Convention on Law of the Sea, 1982; Pacific Island countries and territories supported lodge of their boundaries data – on-going technical advisory and support for baselines and marine zones	On Track
Natural Resource Economics	Vulnerability and risks managed	Preliminary economic assessment of adaptation options on Lifuka Island completed	On Track
Water Governance	Vulnerability and risks managed	Tongan language resource and awareness materials on climate change developed and distributed – GIZ are building the climate change curricula in Tonga and this project will input its Vava'u adaptation assessments as case studies	On Track
	Natural resources developed and managed and governance strengthened	Adaptation activities to address projected climate change impacts identified and implemented – Mangrove Rehabilitation being implemented within pilot communities with an associated climate change adaptation outreach programme with local community, including schools, fishing community and women's groups	On Track
Water Governance	Vulnerability and risks managed	Government and provincial governance mechanisms strengthened through integrated resource management – an overview of the legislative and policy framework, relating to Integrated Water and Coastal Management, including a summary of all relevant policy and legislation completed with recommendations for Improved Governance Frameworks for Integration	On Track
		Technical assistance provided in implementing proposed water legislation – Expert technical assistance provided, resulting in review of proposed legislation, drafting of required necessary regulations and procedures and development of implementation plan	Completed
	Natural resources developed and managed and governance strengthened	Climate change adaptation options identified and integrated into the coastal zone management strategies – assessment study of wastewater management practices within the foreshore housing and commercial sites of Neiafu underway to inform selection of optimum adaptation option	On Track
Water Resources	Natural resources developed and managed and governance strengthened	11 trial sanitation systems to reduce groundwater contamination installed in Neiafu, Vava'u	On Track
		Assessment of sustainable yields from Neiafu Aquifer completed in order to promote better management of groundwater resources – assessment on Neiafu Groundwater and sustainable management; 70% water losses identified which was higher than previously anticipated	Completed
		Increased community engagement in water issues through consultative meetings, direct engagement on the Steering Committee and several community initiatives, such as household audits – 60% increase in community engagement with national Government on water issues in Neiafu, Vava'u	On Track
Water and Sanitation Services	Natural resources developed and managed and governance strengthened	Household water safety planning facilitated in Tonga through WQ training package with Neiafu Integrated Water Resources Management Water and Sanitation Steering Committee – Household Water Safety Planning manual developed and disseminated to counterparts	Completed

Programme	Strategic Objective	Planned Output	Status
Tuvalu			
Risk Reduction	Vulnerability and risks managed	25 rainwater catchments installed in selected households on Funafuti to improve access to clean drinking water – improved access to clean water with approximately 200 people benefiting	Completed
Water Governance	Vulnerability and risks managed	Technical assistance provided on finalisation of National Water and Sanitation Policy	Completed
Water Resources	Vulnerability and risks managed	Successful design and replication of sanitation solutions for Integrated Sustainable Wastewater Management – Ecosan design adopted for replication by five additional Pacific Island countries; design picked up by EU and US Department of Interior for scaling up ecosan approach in Tuvalu and Micronesia	Completed
		Successful engagement of Tuvaluan communities and Government in Integrated Sustainable Wastewater Management – project engaged more than 25% of Funafuti's population through adoption of ecosanitation at the household level; community engagement in governance has increased through community leaders' membership on the project committee and the national APEX body	Completed
		Reduction in sewage pollution across Funafuti and a reduction in freshwater use for sanitation uses – installation of 40 compost toilets removed sewage pollution into groundwater and into coastal waters from 40 houses, representing a 5% reduction in pollution into the groundwater; household water use reduced by 30% in the participating households	Completed
		National Integrated Water Resource Management Policy and Indicator Framework developed – national water policy, plan and indicator framework developed. Intention to seek Government endorsement of these policy instruments by end 2013	On Track
Vanuatu			
DRM Policy and Planning	Vulnerability and risks managed	Risk insurance pilot conducted	On Track
Water Resources	Vulnerability and risks managed	Sarakata Basin Integrated Flood Management Plan established	Completed
		Community engagement with national Government on water issues increased – Sarakata Basin communities adopting appropriate land use strategies to protect water source	On Track
		Successful trials of sustainable forest and land management practices with landowners – Memorandum of Agreements with Government Forestry and Agriculture Departments have established demonstration projects on appropriate Land and Forestry use	Completed
Water and Sanitation Services	Vulnerability and risks managed	Drinking Water Safety Planning training provided through the World Health Organisation – 18 participants from Vanuatu received trained as facilitators	Completed

SOPAC SUBREGIONAL WORK IN 2013

Programme	Strategic Objective	Planned Output	Status	Beneficiaries
DRM Policy and Planning	Vulnerability and risks managed	Opportunities provided for 14 Pacific-African, Caribbean and Pacific States to attend Disaster Risk Management meetings, conferences, training	On Track	Tuvalu, Fiji, Tonga, Papua New Guinea, Cook Islands, Federated States of Micronesia, Niue, Samoa, Marshall Islands, Vanuatu, Palau, Nauru, Solomon Islands, Kiribati
		Support provided for strengthening of disaster information management capacity through the Pacific Disaster Net	On Track	Nauru, Timor-Leste, Fiji, Niue, Kiribati, Palau, Solomon Islands, Samoa, Cook Islands, Federated States of Micronesia, Vanuatu, Papua New Guinea, Tuvalu, Tonga, Marshall Islands
		Assessments of the economic impact of disasters undertaken and reports developed on a needs basis – support provided to conduct a Post Disaster Needs Assessments for Tropical Cyclone Evan from January to March 2013	Completed	Samoa, Fiji
Risk Reduction	Vulnerability and risks managed	Knowledge products for Early Warning Systems developed	On Track	Palau, Vanuatu, Nauru, Papua New Guinea, Kiribati, Niue, Federated States of Micronesia, Tonga, Fiji, Marshall Islands, Tuvalu, Cook Islands, Samoa, Solomon Islands
Geology, Minerals and Hydrocarbon	Natural resources developed and managed and governance strengthened	National capacities strengthened through active participation of Pacific-African, Caribbean and Pacific nationals in the offshore mining research, legislation development and industry – two regional workshops held (Deep Sea Minerals Contract Negotiations and Social Impacts of Deep Sea Minerals and Stakeholder Participation)	Completed	Fiji, Cook Islands, Niue, Nauru, Federated States of Micronesia, Papua New Guinea, Solomon Islands, Timor-Leste, Vanuatu, Tuvalu, Kiribati, Marshall Islands, Tonga, Samoa
		National policy, legislation and regulations developed for offshore mineral exploration and mining – desktop review of existing National legislation provided	Completed	Niue, Federated States of Micronesia, Tuvalu, Kiribati
Geology, Minerals and Hydrocarbon	Natural resources developed and managed and governance strengthened	Regional legislative and regulatory framework produced for offshore minerals exploration and mining – completed and endorsed by all 15 Pacific-African, Caribbean and Pacific countries and 40+ other comments from various experts from NGOs, the private sector, regional/international agencies, academia	Completed	Nauru, Federated States of Micronesia, Tuvalu, Niue, Fiji, Timor-Leste, Papua New Guinea, Solomon Islands, Vanuatu, Kiribati, Marshall Islands, Samoa, Tonga, Cook Islands

Programme	Strategic Objective	Planned Output	Status	Beneficiaries
		National policy, legislation and regulations developed for offshore mineral exploration and mining – Deep Sea Mineral policy drafting guidelines provided	Completed	Kiribati, Tuvalu, Vanuatu, Federated States of Micronesia, Marshall Islands, Cook Islands, Solomon Islands, Nauru
		National policy, legislation and regulations developed for offshore mineral exploration and mining – National Seabed Minerals Policy drafted and delivered	Completed	Fiji, Tuvalu, Niue, Tonga
		Frameworks for effective management and monitoring of offshore exploration and mining operation established – Model Bill to implement International Law obligations provided	Completed	Nauru, Kiribati
Pacific Sea Level Monitoring	Natural resources, systems, and processes monitored and assessed	Measurement and communication technologies refurbished and upgraded at all 12 Pacific Sea Level Monitoring and associated Continuous Global Positioning System/Global Navigation Satellite System stations – progress on the array upgrade this year included work in Marshall Islands (November 2012), Federated States of Micronesia (April 2013), Nauru (July 2013) and Tuvalu (August 2013)	On Track	Cook Islands, Fiji, Tonga, Samoa, Marshall Islands, Vanuatu, Kiribati, Tuvalu, Nauru, Papua New Guinea, Federated States of Micronesia, Solomon Islands
Pacific Sea Level Monitoring	Natural resources, systems, and processes monitored and assessed	Strategic communications in relation to the broader Climate and Oceans Support Program in the Pacific (COSPPac) and the Pacific Sea Level Monitoring (PSLM) array undertaken; regional awareness of the Program products improved and capacity built to use products – media releases released; local news reports on COSPPac, PSLM and the Oceans and Islands Programme activities arranged. COSPPac Regional Officer taking control of the administration of service payments for the regional array and continues coordination of COSPPac activities with other regional climate change interests	On Track	Samoa, Marshall Islands, Solomon Islands, Tuvalu, Papua New Guinea, Vanuatu, Cook Islands, Federated States of Micronesia, Tonga, Kiribati, Nauru, Fiji

Programme	Strategic Objective	Planned Output	Status	Beneficiaries
		Precision levelling of gauges and associated Continuous Global Positioning System stations provided to contribute to a sustained regional sea level monitoring system in the Pacific region which is implemented and maintained to address increasing regional concern over climate change – routine surveys undertaken in Vanuatu (October 2012), Cook Islands (December 2012), Fiji (February 2013), Tonga (April 2013), Samoa (May 2013), Solomon Islands (June 2013), Tuvalu (July 2013), Kiribati (August 2013), Nauru (September 2013) and Marshall Islands (October 2013); precision levelling reports for all surveys also completed	Completed	Kiribati, Vanuatu, Nauru, Fiji, Samoa, Tonga, Solomon Islands, Marshall Islands, Tuvalu, Cook Islands
		Array calibration, maintenance and data communication support provided to contribute to sustained regional sea level monitoring system implemented and maintained to address concern over sea level rise and enhance understanding of sea level variability – visits made to check the gauges in June 2013	Completed	Tonga, Samoa
Water Governance	Vulnerability and risks managed	National Water, Sanitation, and Climate Outlook Overviews developed as a tool for national planning and advocacy and input to development of Regional Framework	On Track	Cook Islands, Solomon Islands, Vanuatu, Marshall Islands, Federated States of Micronesia, Tonga, Palau, Niue, Tuvalu, Nauru
Water Resources	Natural resources developed and managed and governance strengthened	Capacity supported at the national and regional levels to resource improved water resource management through technical assistance provided to in-country demonstration projects – one sub-regional and two in-country technical support missions undertaken during the reporting period to support routine project management, national Integrated Water Resource Management planning, follow-up project development	On Track	Palau, Vanuatu, Tuvalu, Cook Islands, Solomon Islands, Fiji, Niue, Samoa, Papua New Guinea, Federated States of Micronesia, Nauru, Tonga, Marshall Islands
		Governance structures improved to support the implementation of an integrated approach to water resource, sanitation, and wastewater management – National Apex Water Committees established	Completed	Tuvalu, Fiji, Federated States of Micronesia, Marshall Islands, Palau, Nauru, Samoa, Solomon Islands, Niue, Vanuatu, Tonga, Papua New Guinea, Cook Islands

Programme	Strategic Objective	Planned Output	Status	Beneficiaries
Data and Information Management	Natural resources developed and managed and governance strengthened	Pacific Island countries and territories petroleum database maintained for all relevant membership countries – Oceans and Islands Programme in collaboration with Geoscience Australia completed further organisation of data digitised from original hard copy sources of Pee Dee Belemnite (PDB). PDB hard copy materials will be transferred to SOPAC Division in late 2013, effectively closing off transcription	On Track	Solomon Islands, Fiji, Tonga, Vanuatu, Papua New Guinea
Marine, Coastal, Science and Survey	Vulnerability and risks managed	Increased regional and global understanding of potential climate change and climate variability impacts with respect to wave climate; information provided for improved understanding of coastal vulnerability and adaptation responses – project initiation meeting in Tuvalu and Fiji; oceanographic instrument deployment undertaken in both study sites; Global Navigation Satellite System and photo surveys undertaken, benchmarks established, sediment sampling; continued maintenance of deployed instruments	On Track	Fiji, Tuvalu
Regional Maritime Boundaries Sector	Natural resources developed and managed and governance strengthened	Support provided to assess potential for Extended Continental Shelf (ECS), delineate claims and formalise documents for submission and defence to the UN Commission of the Limits of the Continental Shelf (UN CLCS) – Kiribati and Tuvalu successfully submitted their respective ECS claims in early 2013; continued support provided for the presentation of these submissions to the UN CLCS, New York	Completed	Tuvalu, Kiribati

SOPAC REGIONAL WORK IN 2013

Programme	Strategic Objective	Planned Output	Status
DRM Policy and Planning	Vulnerability and risks managed	New integrated regional Disaster Risk Management and Climate Change strategy developed – Consultations undertaken at the national level in 2012 and regional consultation undertaken in July 2013 at the Joint Meeting of the Pacific Platform for Disaster Risk Management and Pacific Climate Change Roundtable	On Track
		5th Session of the Pacific Platform for Disaster Risk Management and Pacific Climate Change Round Table successfully conducted – statement of the joint meeting agreed and chairs summary developed in draft; over 300 participants	Completed
DRM Training and Capacity Building	Vulnerability and risks managed	Disaster Risk Management competency framework developed to help guide Disaster Risk Management training and capacity-building	On Track
Information Management/ Pacific Disaster Net	Vulnerability and risks managed	Capacity developed in the region through the implementation of applications for analysing disaster risk and economic impact of disasters to inform policy and programming at the national and regional levels	Completed
		Regional disaster database using the DesInventar methodology established and institutionalized – 1927 event records from Pacific Disaster Net and Pacific Catastrophe Risk Assessment and Financing Initiative Consequences migrated to DesInventar system, research and quality control applied.	Completed
		Results from the regional analysis compiled and presented in a Regional Risk Assessment Report with support from UN Office for Disaster Risk Reduction (ISDR); available for the 2013 ISDR Global Assessment Report on Disaster Risk Reduction	Completed
	Natural resources developed and managed and governance strengthened	Pacific Disaster net redesigned to improve user-friendliness – Documents 1377 (total 10984), Events 9 (total 1299), Calendar 81 (total 738), Contacts 54 (total 760)	On Track
Technical Workshop	Natural resources, systems, and processes monitored and assessed	Specialist technical support provided to procure, maintain, calibrate, mobilise/demobilise oceanographic, hydrographic, geophysical, hydrological, geological and other technical equipment and instrumentation – the technical workshop is a support service, majority of Marine Coastal Science and Survey Sector tasks reported are only possible if a functional, well-equipped and staffed workshop is adequately resourced and in place	On Track
Natural Resource Economics	Vulnerability and risks managed	Report on economic value of improved meteorological services submitted	Completed
Natural Resource Economics	Natural resources developed and managed and governance strengthened	Resource economics training materials/guidance materials developed – cost-benefit analysis manual developed and being reviewed externally	On Track
		Newsletters of Pacific Resource and Environmental Economics Network released to increase awareness of natural resource issues	On Track

Programme	Strategic Objective	Planned Output	Status
Water Governance	Vulnerability and risks managed	Effective integration of Water and Sanitation, Disaster Risk Management and Climate Change Adaptation efforts at the national and regional levels – Engagement of Water Sector in Disaster Risk Management and Climate Change Adaptation programmes, and technical advice to member countries and partners (as appropriate) on response to specific disaster events	On Track
		Increased awareness of sustainable water promoted through the production of 6 monthly newsletters and maintenance of an interactive water action database – Regional Water and Sanitation Consultations held in July 2013 as its inputs to the Joint Climate Change and Disaster Risk Management Platform meeting allowed partner engagement in the development in the Regional Water, Sanitation and Climate Framework	On Track
		Consultation process carried out to progress the development of an updated Regional Framework for Water, Sanitation and Climate – Regional Consultations for Water and Sanitation held in July 2013 in Nadi, with active participation of 11 Pacific Island countries; logistical and financial support provided for participation	Completed
		Technical assistance provided to strengthen the profile, relevance, capacity, and effectiveness of national water and sanitation APEX bodies – National Water and Sanitation Committees engaged and continually supported in water governance in Solomon Islands and New Caledonia as part of the Integrated Water Resources Management Planning exercise and National Water, Sanitation Outlook work	On Track
		Improved communication and coordination within the water resources management sector through regional multi-stakeholder consultations – agreement reached with Melanesian Spearhead Group on support for the recruitment of a water and sanitation access facilitator (including Memorandum of Understanding and Terms of Reference)	On Track
		Integrated Water Resource Management Resource Centre maintained, updated and promoted – total annual hits at approximately 35,000, and unique hits at approximately 30,000 for 2012 calendar year, continuing a consistent growth in use since establishment in 2008	On Track
Water Governance	Vulnerability and risks managed	Awareness materials and educational programmes targeting politicians, the media, and youth developed to increase awareness of integrated water resource management and safe water and sanitation – detailed briefings given to Pacific delegations to the 2nd Asia Pacific Water Summit, including Heads of State (Vanuatu, Niue, Fiji), Deputy Heads of State (Solomon Islands, Papua New Guinea, Tuvalu), and Ministers (Kiribati, Samoa); media briefings prepared for Regional Water and Sanitation Consultations	On Track
		Increased collaboration and cooperation in the area of Integrated Water Resource Management – regional collaboration established with newly formed Asia Pacific Centre for Water Security; input into global consultations on groundwater governance, briefing to UN Special Rapporteur for the Human Right to Water and Sanitation	Completed
	Natural resources developed and managed and governance strengthened	Pacific Island countries’ ability to fulfil the obligations associated United Nations Resolution on Human Rights to safe drinking water and sanitation strengthened – two consultation meetings supported which helped facilitate exchanges between Pacific Island Countries and Territories in Disaster Risk Management and Water and Sanitation	Completed

Programme	Strategic Objective	Planned Output	Status
Water Resources	Natural resources, systems, and processes monitored and assessed	Technical assistance provided as required in the areas of water resource assessments – technical review of reports for Building Climate Change Resilience of Coastal Communities in Vava'u, Tonga; GWGA02XS, terms of reference for hydrogeological support projects (Palau, Samoa); deployment of equipment for maintaining rainfall gauges across 14 Pacific Island countries and territories	On Track
		Rainfall analysis completed to promote enhanced application of climate information to cope with climate variability and change – advice and technical support provided to Marshall Islands, Water, Sanitation and Hygiene Cluster, International Federation of the Red Cross and UN Office for the Coordination of Human Affairs for 2013 Marshall Islands drought, includes collation and analysis of available data, and provision of equipment	On Track
Water and Sanitation Services	Natural resources developed and managed and governance strengthened	Gender mainstreaming and community participation workshops conducted – Water, Sanitation and Hygiene (WASH) and Gender training module developed for a WASH training package developed for Tokelau	On Track
Water and Sanitation Services	Natural resources developed and managed and governance strengthened	Support provided to the Pacific Water, Sanitation and Hygiene (WASH) Cluster during periods of emergencies and disasters; three monthly Pacific WASH Coalition meetings conducted – WASH Cluster and Coalition membership updated and Terms of Reference established for members to consider; Participation in WASH Cluster emergency response meetings and provision of appropriate feedback and technical support	On Track
		On-going Water Sanitation and Hygiene consultations to garner support – Small Island Developing States representative at the Global Water, Supply and Sanitation Collaborative Council (WSSCC) Steering Committee successful, this strengthens the on-going relation with WSSCC	On Track
		Trials completed on appropriate rural water supply systems through Water and Sewerage Department, Fiji – working group consisting of key relevant partners has been established, including Partners in Community Development Fiji, Ministry of Health, Water and Sewerage Department, UNICEF, SPC-SOPAC and the Water Authority of Fiji	On Track
		Final Pacific water utilities benchmarking report completed to gauge performance of water utilities in terms of water and sewerage coverage, including environmental compliance.	Completed
		Technical assistance provided as required in the area of water demand management	On Track
	Vulnerability and risks managed	World Water Day (WWD) 2013 celebrations supported regionally with resource materials linked to WWD 2013 theme produced – WWD educational awareness materials produced and distributed to SPC member countries in English and French	Completed
		Water, Sanitation and Hygiene resources disseminated regionally – Keeping Your Drinking Water Safe toolkits have been distributed	On Track
		Report completed on the inventory and status of compost toilets across Pacific Island countries to promote sustainable approaches to wastewater reduction	Completed
		Knowledge management network strengthened through technical assistance and attendance at the Water and Sanitation Collaborative Council coordinators international meeting – Attendance of Small Island Developing States representative to the Water, Supply and Sanitation Collaborative Council Global Steering Committee	Completed
		Technical assistance provided as required in the area of Drinking Water Safety Planning – resource materials and guidance provided to member countries in close coordination with the World Health Organisation Phase 3 work	On Track

Programme	Strategic Objective	Planned Output	Status
Water and Sanitation Services	Natural resources, systems, and processes monitored and assessed	Lab analysis completed to determine the effectiveness of ‘Give Clean Water’ filters used with various sources of water – analysis revealed filters performed at optimal levels despite reaching back-flushing stage	Completed
Data and Information Management	Natural resources developed and managed and governance strengthened	Pacific Island Marine Spatial Information System (web-based portal) developed to enhance the web interface of GEONETWORK and improve access and interrogation of data products – two site visits to Oceans and Islands Programme made by UN Environment Program and GA to assess existing data management and archiving efforts within the Oceans and Islands Programme and review existing open source platforms to facilitate the development of a discovery and interrogation platform	On Track
		Easy and secure access to ocean, coastal, hydrographic and other geoscience spatial and observational data and products provided – GEONETWORK has increased its content holdings by 45% in the last reporting period and the number of requests for data release has increased 78%	Completed