

Lasting change

A diver installs oceanographic equipment, used to assess the risks from cyclonic swells and gather information for disaster risk and coastal management planning in Rangiroa, French Polynesia. Three EU-funded projects are helping Pacific communities build greater resilience to natural disasters. **Photos: SPC**



Many Pacific Island countries and territories (PICTs) face a great number of challenges today.

In order to build robust economies and deliver lasting benefits to their people, these PICTs must address the pressing issues of the day such as climate change, natural disasters and dwindling fisheries resources – to name but a few.

Already geographically isolated with small, vulnerable populations, the odds can seem stacked against them.

Individually, it can be extremely difficult for many PICTs to develop the technical and scientific expertise needed to tackle these kinds of problems at a national level.

But, there's hope when the problems, and the solutions, are shared.

Regional organisations like the Secretariat of the Pacific Community (SPC), which has a long-standing history of service delivery to PICTs, are helping in this regard.

And development partners such as the European Union (EU) are playing an important role through funding initiatives that address areas of critical development concern for many Pacific Island nations.

With EU funding totalling approximately €37 million in 2012, SPC is implementing development projects across various sectors in Cook Islands, Federated States of Micronesia, Fiji, French Polynesia, Kiribati, Marshall Islands, Nauru, New Caledonia, Niue, Palau, Papua New Guinea, Pitcairn Islands, Samoa, Solomon Islands, Timor Leste, Tokelau, Tonga, Tuvalu, Vanuatu, and Wallis and Futuna.

Improving the livelihoods of Pacific people through sustainable economic development drives the EU's development agenda in the region.

For example, two EU-funded projects address the adverse effects of climate change on food and water security as well as commercial agri-

culture. One project helps PICTs breed drought and disease resistant crop varieties for increased food security and enhanced crop production.

Another helps PICTs better manage their fragile water resources to secure access to safe drinking water and water for farming needs.

And two EU-funded trade projects work to increase exports of high-value agricultural commodities to derive greater economic benefits for grassroots farmers and help improve the region's integration into the global economy.

Other projects are helping PICTs with the sustainable management of its all-important natural resources, be they fisheries (the region's largest remaining renewable resource) or deep sea minerals (an emerging sector with the potential to deliver great benefits).

A number of EU-funded projects that directly address human development will also bring economic benefits for Pacific societies.

And some projects work to improve access to information and communications technologies for the region's poor, helping give them the resources to more productively participate in the economy. Others aim to integrate

the cultural sector into national economies, bringing greater benefits to cultural practitioners. Still others work to improve opportunities for rural women aiming to bring an end to gender discrimination and ensuring that all members of society can contribute their talents for everyone's benefit.

All in all, the critical interventions being implemented by SPC through EU funding are helping Pacific people establish sustainable livelihoods now and for years to come.

• For more information, visit www.spc.int



**By SPC Director-General
Dr Jimmie Rodgers**



In 2011, emergency supplies of fresh water had to be flown in to address a severe drought in Tuvalu.

Helping islands countries cope with climate change

The adverse effects of climate variability and climate change are putting additional pressure on already vulnerable Pacific Island states and affecting the very basics of survival – fresh water supply and food production.

But there's hope in sight. A number of EU-funded projects implemented by SPC are helping the Pacific members of the African, Caribbean and Pacific Group of States (PACPs) adapt and become more resilient through targeted interventions. The PACPs are Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Nauru, Niue, Palau, Papua New Guinea, Marshall Islands, Samoa, Solomon Islands, Timor Leste, Tonga, Tuvalu and Vanuatu.

Food security

The €3 million European Development Fund (EDF) *10. Adapting clonally propagated crops to climatic and commercial changes* project is implemented by SPC's Land Resources Division through its Centre for Pacific Crops and Trees (CePaCT).

Working with research partners around the world, the project is modifying the genetic basis of two Pacific Islands staple foods: taro and xan-

thosoma – and the lessons learnt will be used to adapt other tropical crops to climate change.

Xanthosoma is known by different names in the region: Fijians call it *dalo ni tana* while Samoans refer to it as *talo palagi*.

So far, the project has distributed over 6500 plantlets comprising 100 varieties of taro to countries in Africa, Asia, the Caribbean, Europe and the Pacific for field trials for extreme climatic conditions.

In the Pacific, it has distributed 50 varieties to PNG and Vanuatu for this purpose and the new varieties and relevant technology developed will be shared by all participating countries.

In time, new drought and disease resistant varieties will be distributed to farmers and communities in the Pacific and around the world for greater food security.

A secondary aim of the five-year project, which started in 2011, is the breeding of new varieties of taro that are easy to grow and have high commercial potential.

Water resources

Water is an integral component of climate

change and the primary medium through which it exhibits its impacts. Climate change directly affects the water cycle and, through it, the quantity and quality of water resources available to meet human and environmental demands.

Pacific Islands countries have fragile water resources due to their small size, lack of natural storage, competing land use and vulnerability to natural hazards.

In many Pacific countries, even small variations in water supply can have a significant impact on health, quality of life and economic development.

The EU-funded €2.8 million *Integrated Water Resources Management (IWRM) Planning Programme* is helping member countries develop governance structures to improve water management and ensure the needs of all users is taken into account.

Implemented by SPC's Applied Geoscience and Technology Division, the five-year project has helped develop, promote and implement appropriate policy, planning, regulatory frameworks and community awareness in 14 PACPs.

For example, in Micronesia, national water summits held in FSM, Palau and RMI have resulted in presidential endorsements of IWRM, including the development of national water policies in each country.

Through the *Pacific Hydrological Cycle Observing System* project, the EU has helped improve the ability of countries to monitor and measure their water resources by installing water monitoring equipment like rain and river gauges as well as flood warning systems, and by training hydro-



logical technicians in data gathering and storage.

The EU is also improving access to safe drinking water by funding the installation of water catchments in vulnerable countries like RMI, Tonga and Tuvalu, and other similar activities.

Renewable energy

In the North Pacific, an EU-funded project is helping improve the quality of life on remote outer islands through the provision of renewable energy while reducing dependency on costly fossil fuels, a known determinant of climate change acceleration.

The €14.4 million EDF10 *North Pacific ACP Renewable Energy and Energy Efficiency* (North-REP) project is implemented by SPC's Economic Development Division in FSM, Palau and RMI.

Since 2010, the project has been working to increase in-country capacity to promote, deliver and sustain renewable energy and energy efficiency programmes.

It is also working towards increased access to affordable, safe, clean, reliable and sustainable electricity supply in the targeted islands.

When North-REP concludes in early 2014, over 12,000 people, 17 health centres and 16 schools in the outer islands are expected to have access to basic electricity for the first time.

In addition, a 10% drop in monthly energy consumption is expected per connected household, while a 7% reduction in fuel consumption for electricity generation is anticipated across the three countries.

Smaller islands states

Within the framework of the EU's *Global Climate Change Alliance* programme, SPC is supporting the governments of nine Pacific small islands states: Cook Islands, FSM, Kiribati, Nauru, Niue, Palau, RMI, Tonga and Tuvalu, in their efforts to tackle the adverse effects of climate change.

The €11.4 million *Global Climate Change Alliance: Pacific Small Islands States* (GCCA: PSIS) project, implemented by SPC's Strategic Engagement, Policy and Planning Facility, assists the countries to plan and implement practical, on-the-ground climate change adaptation projects in conjunction with integrating climate change adaptation measures into national development priorities and plans (an activity known as mainstreaming).

This dual focus will help countries move from an ad hoc project by project approach towards a programmatic approach that can underpin an entire sector.

The move to a more programmatic approach will also help the smaller islands countries better position themselves to access new sources of climate change funding via different methods, e.g. national and sector budget support and climate change trust funds.

With the project still in its infancy (it started in July 2011), countries have identified the following as positive benefits at national level:

- Having the flexibility to identify their own programmatic area depending on their national needs
- Provision of specific funding for practical, on-the-ground climate change adaptation measures
- Availability of training and technical assistance to help them access new sources of climate change funding.



For more information, visit www.spc.int



Two EU-funded trade projects are helping agricultural enterprises gain certification for high-value, niche markets. This is resulting in increased returns for grassroots farmers such as these coffee growers in PNG.

Farmers reap benefits from growing exports

Can trade be a catalyst for change? With the region's agriculture and forestry exports seen as having sustainable growth potential – and the ability to transform rural livelihoods, the answer may be yes.

Since 2008, the EU-funded *Facilitating Agricultural Commodity Trade* (FACT) pilot project has been assisting 14 PACP countries to strengthen the export capacity of these primary industries.

The €4 million EDF9 pilot project, which is implemented by SPC's Land Resources Division, works directly with rural smallholders (farmers and tree growers) and export enterprises to increase and add value to exports from the region.

The project has helped transform enterprises into commercially-viable, market-driven businesses that can cope with the shocks of global financial crises and extreme climatic events.

This has been achieved through an emphasis on market studies, value-chain analyses and consistent supply, leading to more focused business plans while targeted improvements have enabled the enterprises to meet international trade standards. This in turn has helped farmers. For example in PNG, the assistance provided to three coffee enterprises with gaining certifications for high-value niche markets has resulted in better returns for nearly 6000 rural coffee growers.

The project also works at industry level on

areas such as improving food safety standards; designing labelling and packaging; attaining fair trade, organic and forest certification; and increasing exports of high-value commodities such as value-added sawn timber, kava and papaya.

In Fiji, the project has helped revive the country's once-thriving ginger industry by setting up disease-free seed farms to supply more than 400 farmers on the two main islands.

Through the project's assistance, Fiji-based Kaiming Agro has been able to increase its annual production, exports and number of contracted smallholder suppliers.

Similarly in Solomon Islands, hundreds of smallholder growers are benefiting from research into thinning of young teak plantations, support for trial shipments and development of markets in Asia.

With the FACT project concluding this year, its successor, the EDF10 €9m *Increasing Agricultural Commodity Trade* (IACT) project, is picking up the work on a much expanded scale in the 15 PACPs.

In addition to agriculture and forestry, IACT works in the aquaculture/mariculture and livestock sectors to continue to grow Pacific exports and by doing so, improve the region's integration into the global economy.

These actions are bringing lasting benefits to Pacific Islands farmers.





National observers undergo training on identifying and measuring fish species in Tarawa, Kiribati under an EU-funded project that helps PICs better manage their fisheries resources.

Ensuring there's plenty of fish in the sea

It's no secret that the region's fisheries resources – an important source of food and export revenues for Pacific Island countries – are under considerable strain.

Rapid growth in commercial fishing activity in recent times has greatly reduced the stocks of our large tuna resources.

Meanwhile, our coastal fisheries aren't faring any better. They, too, are coming under increasing pressure to provide food for growing populations and cash income in rural areas.

Then there are the export commodities like beche-de-mer, which have been all but depleted across most of the region.

Scientific support

Since 2010, an EU-funded project has been providing the 15 PACPs with practical solutions to these problems, with an emphasis on building the management and decision-making skills of regional fisheries staff by providing improved scientific data.

The €8.6 million EDF10 *Scientific support for the management of coastal and oceanic fisheries in the Pacific Islands region* (SciCOFish) project is implemented by SPC's Fisheries, Aquaculture and Marine Ecosystems Division.

It recently completed important regional assessments for the main species of tuna (an important source of export revenue for many PACPs).

Results of the assessments showed that the region needs to limit catches at around current levels and reduce fishing effort on the bigeye tuna species, with subsequent management implications for countries at national level.

As part of its ongoing tuna tagging activities,

SciCOFish recently tagged over 4,000 bigeye tuna in the central Pacific Ocean. Information from tag recaptures contributes further to what is already the most extensive dataset available for tuna stock assessment in the Pacific.

At a national level, the project has carried out recent tuna data audits in FSM, Fiji, RMI and Vanuatu, resulting in the identification of missing data and more complete estimates of national catches for those countries.

To improve the management of the region's depleted sea cucumber resources, the project has developed and launched an online training programme (www.spc.int/CoastalFisheries/learn-fishid/main/seacucumbers), which trains users in the identification of the different sea cucumber species found in the region.

In addition, SciCOFish recently provided training to fisheries staff in Solomon Islands, Tonga and Vanuatu in the monitoring and management of sea cucumber resources in their countries.

Better returns

A second EU-funded project, jointly implemented by Forum Fisheries Agency and SPC, addresses two key concerns regional leaders have about tuna fisheries: the need to secure greater economic benefits from a resource which is mainly harvested by foreign vessels for processing in Asia; and the fear that a lot of fish are being caught illegally.

The €7.7 million EDF10 *Development of sustainable tuna fisheries in Pacific ACP countries – phase II* (DevFish2) project helps countries develop local tuna industries, creating employment and

export earnings, while improving the deterrence of illegal fishing.

Operating since 2010, DevFish2 responds to requests from countries to meet a wide range of needs.

Recent activities at regional and national level include training the authorities that certify fish exports to Europe from Fiji, PNG and Solomon Islands; strengthening of national fishing industry associations; and the development of new IT systems to monitor licensing and fishing activities in the region.

The project provides ongoing support to the Pacific Islands Tuna Industry Association, helping it link with national private sector associations and convey its members' interests and views at regional and international forums and consultations.

DevFish2 has also enabled industry-wide discussions on issues of fisheries management and development in Cook Islands, PNG, Solomon Islands and Tuvalu by bringing together national associations and other important stakeholders.

Most recently, the project installed IT systems in a number of PACPs, including Cook Islands, FSM, Fiji, RMI, Nauru, Samoa, Solomon Islands, Tonga and Tuvalu, to enhance countries' capacity to analyse illegal, unreported and unregulated fishing.

The project fields national requests for hands-on training, recently sponsoring industrial attachments for six University of Natural Resources and Environment students from PNG at fisheries and processing enterprises in Solomon Islands.

Through the combined efforts of the two EU-funded projects, PACPs should be better equipped to manage their fisheries – without a doubt the region's most significant renewable resource for food security, livelihoods and economic growth.

The loss of this resource would deal a severe and lasting blow – depriving countries of future benefits – and better management systems are needed now more than ever.





Parliament staff in RMI receive ICT training as part of an EU-funded project that works with high-level decision makers to increase ICT access for the poor.

Levelling the playing field for Pacific people

For many in the region, the path to better livelihoods comes paved with a number of obstacles.

A vast majority lack basic access to information and communications technology (ICT) like mobile phones, computers and the Internet, essential in today's global economy.

Those who rely on their traditional knowledge and cultural skills to earn a living often receive little or no government support, as their work isn't deemed to have major economic potential.

And rural women are some of the worst off due to gender discrimination. They are given fewer opportunities and are less likely to succeed than their male counterparts.

Three EU-funded projects implemented by SPC address these specific areas as a means to improving human development and livelihoods in the region.

Laying groundwork

Improving ICT access for the Pacific's poor as well as rural and remote communities hinges on high-level government support.

With this in mind, the €600,000 EDF9 *ICT Access for the Poor* project (which ended in March this year), targeted parliamentarians in 12 PACPs as important drivers of improvement in ICT access in the region.

Implemented by SPC's Economic Development Division, the 30-month project built their practical knowledge, facilitated networking between parliamentarians, provided accessible online resources on ICT for development and supported

relevant policy and legislation initiatives in Cook Islands, FSM, Kiribati, Nauru, Niue, Palau, RMI, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.

Some of the key legislation discussed concerned the deregulation of the telecommunications market and cybercrime.

This has resulted in greater political support for national ICT policies and legislation – the key building blocks to creating enabling environments to advance ICT for development in countries and marshalling the government resources required to do so.

In Samoa, for example, the project set up an e-Centre for parliament, which has resulted in improved ICT access and an increased government budget for ICT in 2012.

In FSM, Kiribati, Palau and Solomon Islands, the project has helped draft appropriate policies to guide ICT development to support national priorities.

The project has also greatly increased accessibility of resources on ICT for development via www.e-pic.info – an online portal with ICT information relating to PACPs.

In time, the important groundwork being laid now should increase ICT access for everyone, including the poor.

Cultural gains

Despite holding immense potential for economic growth and improved livelihoods, the Pacific's cultural sector continues to remain an

informal part of national economies.

The sector fails to draw substantial government support to drive its development. This in turn deprives cultural producers (including those in rural communities) who make a living from visual art, craft, dance, music and fashion of the opportunity to derive greater benefits from their traditional knowledge and skills.

Since 2010, an EU-funded project has taken a systematic approach to developing the cultural industries in the 22 Pacific Island members of SPC, with a particular focus on 11 PACPs: FSM, Kiribati, Nauru, Niue, Palau, PNG, RMI, Solomon Islands, Tonga, Tuvalu and Vanuatu.

Implemented by SPC's Education, Training and Human Development Division, the €813,000 *Structuring the Cultural Sector for Improved Human Development* project works with countries to develop appropriate policies, promote cultural industries and preserve cultural heritage while fostering intra-ACP cultural relations and capabilities.

In Tuvalu, for example, the project has helped map threatened cultural heritage sites and develop relevant policy, which has raised the profile of culture in other sectors such as tourism.

In Solomon Islands, the project facilitated an exchange between the country's national museum and the Museum Association of the Caribbean, which has led to the development of a natural heritage conservation plan for the Solomon Islands museum.

These actions are preparing Pacific communities to gain more benefits from their substantial cultural diversity and wealth.

Gender equality

In Solomon Islands, a new EU-funded project is working to improve the lives of rural women, among the Pacific's most disadvantaged, by addressing discrimination through training and research.

Since March 2012, the approximately €316,000 *Empowering civil society to promote gender equality and combat gender discrimination in the Solomon Islands* project has been working with nine provinces in the country to improve gender equality.

It is jointly implemented by the Pacific Regional Rights Resource Team (housed under SPC's Education, Training and Human Development Division), Equal Rights Trust (an international NGO) and SPC's Solomon Islands Country Office.

When the 18-month project ends in September 2013, it will have trained nine provincial officers in gender equality, preparing them to provide information, training and assistance to those who face discrimination. The officers will also collect crucial data on types and frequency of discrimination, to be used to raise awareness at the national level.

This information will guide a national gender equality forum (set up by the project and consisting of planners, civil servants and civil society) to develop strategies for assistance to rural women.

Further, the information will also be presented in a national gender discrimination report, which the country's law- and policy-makers can use to improve access to justice and services.

In the long term, the project's efforts should result in improved legislation and better legal services for rural women.

For more information, visit www.spc.int





+ On Tonga's outer islands, the provision of rainwater storage tanks has greatly increased access to safe drinking water and made communities better prepared for droughts.

Building resilience to natural disasters

A spate of recent natural disasters – such as the Samoan earthquake and tsunami of 2009, the Tuvaluan drought of 2011 and the Fijian flash floods in early 2012 – have had devastating effects on Pacific Island countries, claiming hundreds of lives, displacing thousands of people and placing considerable strain on struggling economies.

To reduce the vulnerability of PICTs to natural disasters and increase the region's ability to deal with them, the EU is funding three disaster risk management (DRM) projects implemented by SPC's Applied Geoscience and Technology Division.

These projects work to increase resilience in communities by improving emergency response coordination and communication as well as access to safe drinking water. They also work with governments to develop joint DRM and climate change action plans; increase regional collaboration; install early warning systems; and improve the use of disaster-related data.

Resilient communities

Since 2008, the *Disaster Risk Reduction in 8 Pacific ACP States* project has been helping FSM, Nauru, Palau, PNG, RMI, Solomon Islands, Tonga and Tuvalu build their resilience to drought and improve preparedness to respond to natural disasters.

The approximately €9.8 million EDF9 project targets two specific areas: access to safe drinking water; and emergency communications and

operation centres.

Interventions such as provision of rainwater catchments directly to communities have increased storage capacity and improved access to clean water, reducing health problems associated with consuming contaminated water.

By increasing the use of rainwater catchment systems and improving distribution of fresh water by upgrading the piped water supply system, the project is helping ensure a more efficient and sustainable supply of clean water, which will be particularly valuable during drought periods.

And to assist countries to strengthen disaster management at the national level, the project is building new emergency operation centres and providing early warning communications equipment, which should ensure communities are better prepared, thereby reducing the risks of loss of human life and property damage in the event of a natural disaster.

Helping OCTs

A second EU-funded project works to strengthen government capacity to prevent and respond to emergencies in four Pacific territories: French Polynesia, New Caledonia, Pitcairn Islands and Wallis and Futuna.

The approximately €5.7 million EDF9 project *Supporting Disaster Risk Reduction in Pacific Overseas Countries and Territories* targets two areas: assessing natural disaster risk to enhance mitigation efforts; and accessing safe drinking water and improved

sanitation.

In French Polynesia, the project works to reduce natural disaster risk in two vulnerable zones: the Marquesas archipelago, which is highly exposed to tsunami risk, and the Tuamotu archipelago, which faces recurrent storm surges (abnormal rises in sea level resulting from storms, which can threaten life and property in coastal areas).

In the Tuamotus, the project is developing storm surge models and inundation maps and conducting a cost-benefit analysis of housing infrastructure options in coastal areas, with the aim of achieving risk-sensitive coastal planning and improved disaster mitigation.

In the Marquesas, the project is helping strengthen the tsunami alert system through ensuring all warning sirens are working and training technicians to diagnose malfunctions and make minor repairs.

To reduce contamination of drinking water, New Caledonia is receiving project support to develop water safety plans at the municipal level and to make its water storage and distribution infrastructure contamination-proof. The project also promotes greater collaboration between authorities on the management of wastewater and between Northern Province water stakeholders.

The project is improving access to water (for drinking and agriculture) for the people of drought-prone Pitcairn Islands through additional catchment and storage of rain and spring water.

It is helping Wallis and Futuna become better prepared to face natural hazards, particularly tsunamis, through enhanced planning at national and community levels.

Building capacities

Since 2009, the approximately €1.9 million *ACP-EU Natural Disaster Facility* (NDF) project has been reinforcing the DRM capacities of 14 PACPs at government, agency and community levels through planning assistance, provision of essential equipment and training.

The project has helped Cook Islands and Tonga develop joint climate change and DRM national action plans and assisted PNG with its programme to mainstream disaster risk considerations into national and sectoral planning and budgetary processes. Additionally, it has assisted PNG's Morobe Province to draft a provincial climate change and DRM action plan, and provided 10 high-frequency radio communications stations to improve police emergency communications in this remote area.

The NDF project has assisted Kiribati with the review of its 1993 National Disaster Act, resulting in the development of a new set of DRM governance arrangements and priorities for implementation.

In Tonga, the project has provided training in several areas including psychological support and disaster trauma counselling, climate change impacts on diseases, and entomology (study of insects).

It has also helped Tongan disaster response agencies develop coordinated response plans, and trained community members and health workers on sanitation and food and water safety issues during disasters.

In Fiji, Samoa and Solomon Islands, the project has provided training on the use of www.pacific-disaster.net, the largest and most comprehensive information resource for PICTs on DRM. **IF**

Managing our underwater wealth, with great care

Balancing the careful development of a deep sea mineral industry and environmental concerns can be a veritable minefield for PACP governments.

Which is why an EU-funded project is assisting countries to develop comprehensive national policies, legal frameworks and institutional capacities to better manage this emerging sector.

The EDF10 €4.7 million *Deep Sea Minerals (DSM) in the Pacific Islands Region: a Legal and Fiscal Framework for Sustainable Resource Management* project is implemented by SPC's Applied Geoscience and Technology Division.

The four-year project promotes a regionally integrated approach to DSM regulation, helping countries balance their regulatory requirements with sufficient incentives and security of tenure to promote investment and private sector participation in national DSM industries.

So far, national stakeholder consultations held in Cook Islands, Fiji, Kiribati, Nauru, Niue, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu have helped raise awareness of the opportunities and challenges whilst enabling contributions from a wide range of stakeholders. (Consultations in the five remaining PACPs: FSM, Palau, PNG, RMI and Timor Leste are due in coming months.)

This has helped establish national offshore mining committees and develop country 'roadmaps' outlining the steps for each country to



A representative from FSM studies information on deep sea minerals at a workshop.

develop appropriate policies, laws and capacities to regulate DSM activities.

Several countries, including Cook Islands, Kiribati, Nauru, PNG and Tonga, have already commenced legislative reviews and drafting of DSM-specific policies, laws and regulations with the support of the project's Legal Advisor, and further policy development work is earmarked for other PACPs in 2012.

The project is building national capacity

through on-vessel training, internships, training workshops and lectures.

"With limited knowledge on deep sea ecosystems and environments derived from the ongoing studies in the last four decades, prudent decisions are necessary to ensure environmental impacts of deep sea mineral exploration and exploitation are minimised or avoided," says divisional director Dr Russell Howorth.

In this regard, the project helps countries comply with international obligations, rules and standards, and properly control and hold liable commercial DSM operators contracted by them.

It also assists countries with minimising and mitigating the risks of DSM activities causing environmental harm, and unintended adverse impact on other sea users.

Adds Dr Howorth: "While deep sea minerals may present an alternative economic sector for development for countries in the region, any decision to mine or not to mine hinges on the results

of extensive mineral exploration, environmental studies, and financial capabilities."

Due to the long-term nature of the economic development and the accompanying pitfalls, the project is equipping countries with the necessary tools to guide decisions to suit their sovereign needs.

This crucial groundwork should ensure long-term sustainability and lasting benefits.



Finding a fix for Tarawa's vulnerable coastlines

For the people of South Tarawa, life on the most densely populated atoll in Kiribati can be a challenge.

South Tarawa faces severe coastal erosion problems which result in degradation of the natural shoreline system, loss of land, wave overtopping and flooding of businesses, houses and critical infrastructure such as the local hospital.

It's a problem that's exacerbated by the sand and gravel mining carried out on its already vulnerable beaches to meet growing urban construction demand.

Since 2008, an EU-funded project has been working to remedy this problem and provide an alternative, appropriate supply of construction aggregate.

The approximately €3.1 million *Environmentally Safe Aggregates for Tarawa* (ESAT) project has helped Kiribati develop a sustainable lagoon basin aggregate dredging operation and a governance structure to suit local conditions.

In June, SPC's Applied Geoscience and Technology Division, which co-implements the project with the Government of Kiribati, signed

a contract with a Singapore-based company for the construction and supply of a ship and crane operated dredging system.



A woman collects gravel for the construction industry on the beach in Temaiku, South Tarawa.

Delivery is expected in late 2012. Once operational, it's expected to contribute significantly to the reduction of beach mining activities in

South Tarawa and alleviate erosion issues in many locations as well as provide a local supply of construction aggregates adequate to meet growing demands.

ESAT is also assisting with the development and implementation of systems of ongoing monitoring of possible environmental impacts of lagoon aggregate mining and of comparative beach mining where it has occurred or continues to occur. Comprehensive environmental impact assessments including a dedicated fisheries resource assessment have been carried out.

Says Arthur Webb, Deputy Director of SPC's Oceans and Islands Programme: "Unregulated and growing beach mining activities are prevalent throughout the urbanised atolls and are a profoundly environmentally damaging practice destroying shoreline systems in many urban atoll locations.

"The issue of inadequate aggregate supply is arguably one of the most important marine mineral issues today; inadequate construction aggregate supply and destructive mining practices are hampering sustainable development."

Whilst ESAT is mainly targeted at South Tarawa, it also has the capability to assist other atolls in the group and potentially others in the region, such as Funafuti in Tuvalu – another low-lying atoll nation facing similar problems.

For more information, visit www.spc.int

