




Managing the Ecosystem and Livelihood Implications of Energy Policies in the Pacific Island States



IUCN Oceania Energy Programme



 Austrian
Development Cooperation

Project: Managing the Ecosystem and Livelihood Implications of Energy Policies in the Pacific Island States

Funding: Governments of Italy (€3 million) and Austria (€1 million)

Implementing Agency: The International Union for Conservation of Nature (IUCN) through its Oceania Regional Office in Suva, Fiji Islands.

Participating Countries: Republic of the Marshall Islands, Palau, Samoa, Tonga, Tuvalu and Vanuatu

This is a special report covering the first six months of this year (2009). Report prepared by Anare Matakiviti, Energy Programme Coordinator and reviewed by Salote Sauturaga, Energy Project Assistant.

Introduction

IUCN has embarked on a campaign to raise awareness of the importance of the ecosystems for our human survival through its global programmes including energy under the *Energy, Ecosystems and Livelihoods Initiative (EESLI)* framework. The goal of the **EESLI** is: *‘to support and accelerate the transition to energy systems that are ecologically sustainable, socially equitable, and economically efficient while making full use of the best available technologies and governance arrangements’*. IUCN's involvement in energy is borne out of the fact that energy is as much an environmental issue as it is an economic and development issue. IUCN is well placed to help in achieving a better understanding of the relationships between energy systems and the natural ecosystems and the impacts each has on the other. IUCN has a wealth of knowledge on cutting edge conservation science and applied research accompanied by field projects and linking these to developing global, regional and national policies. More than 11,000 volunteer scientists and specialists are continuously building a knowledge-based information database on relevant topics related to the natural ecosystems and how they are affected by negative externalities from the current energy mix. IUCN membership is made of governments, states, non-government organisations and civil society groups which places it in a unique position to negotiate and influence policy decisions related to the conservation of the natural resources.

Pacific SIDS EESLI

Managing the Ecosystem & Livelihood Implications of Energy Policies in the Pacific Island States is the Pacific component of the IUCN's *Energy, Ecosystems and Sustainable Livelihoods Initiative (EESLI)*. The objective of this program is to help accelerate the transition within participating Pacific Small Island Developing States (SIDS) to energy systems that are ecologically efficient, sustainable, and socially equitable, by:

- a) supporting beneficiary countries in the development and implementation of environmentally sound, sustainable energy policies; and

- b) implementing a number of renewable energy pilot projects focusing on ecosystem conservation and livelihood enhancement.

The expected output is the implementation of pilot projects in six Pacific SIDS that demonstrate sustainable energy technologies, and management systems for those technologies, that are suitable for wider dissemination in other Pacific SIDS and beyond. The participating countries are: the Marshall Islands, Palau, Samoa, Tonga, Tuvalu and Vanuatu. The programme is made possible through funding provided by the governments of Italy and Austria. While the programme covers only six countries, the outcomes will be of significance to the whole region due to the following: The region is home to some of the smallest island nations in the world that are spread over a wide area of ocean and is also one of the most vulnerable regions of the world towards the threat of climate change, global warming and sea level rise. These phenomena pose a huge threat to the natural ecosystems and biodiversity in general and according to established scientific research are intrinsically linked to unsustainable production and uses of energy.

It is expected that lessons learned from the Pacific SIDS EESLI will be incorporated into the framework of the Global Island Partnership (GLISPA), an initiative that mobilises leadership, increases resources and fosters the sharing of experiences, know-how, good practices, technologies and innovations in a *“cost effective and sustainable way that will catalyze action for conservation and sustainable livelihoods on islands.”*

Project Components

The Pacific SIDS EESLI project comprises of two components:

1. ***Energy projects chosen by the countries***

The countries developed the project proposal and submitted it to the Italian Government for processing and endorsement. The Italian Government has established a Joint Committee¹ to process and endorse project proposals. A summary of the countries' projects and progress are highlighted below:

- (i) **Republic of the Marshall Islands**

The Republic of the Marshall Islands (RMI) project proposal was endorsed during the JC4 meeting in February. The project focuses on energy efficiency through the replacement of inefficient mercury and vapour street lights with more energy efficient lights together with the installation of some one hundred solar street lights in both Majuro and Ebeye. The street lights in Majuro and Ebeye are costing the Power utility about USD500k per annum to sustain. With the local government defaulting on the payment of street bills, the utility is forced to bear the cost. The retrofitting exercise will save the utility about USD 300K per annum.

¹ The JC comprises of Pacific SIDS UN Missions and the representatives of the Italian and Austrian Governments. IUCN sits in the JC meeting by virtue of its role as the executing agency for the EESLI country projects. The JC meets twice a year.

The total project cost allocated is USD 1.09 million. The project is being coordinated by the Ministry of Resources and Development (MRD). A National Task Force has been established together with a Technical Team based at the Project Management Unit of the Ministry of Works and Public Transport (MWPT). The Task Force is made up of representatives from key ministries and departments and civil society groups, The Project Management Unit (PMU) is a division under the MWPT that manages mostly Infrastructure Development and Maintenance Plan (IDMP) Projects funded by the Compact of Free Association between the RMI and the United States, but is also the main project management unit for the RMI Government. The Technical Team comprises of representatives of the Ministry of Works and Public Transport (MWPT). The PMU technicians will be carrying out the installation of the street lights, working in close collaboration with the Marshall Islands Energy Company (MEC).

A work plan has been developed and endorsed by the National Task Force. The PMU is now implementing the work plan and an invitation to bid for the supply of the lighting units has been advertised in the local media and regional organisations websites including the IUCN-Oceania web-page. Following this, a call for or quotation will be extended to interested parties and it is envisaged that the tender for the supply of the lighting equipment will be awarded at the end of July. The commissioning of the new street lights is expected by end of September.

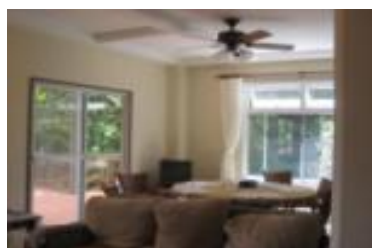
(ii) Palau

The Palau Home Loan energy efficiency programme is managed by the National Development Bank of Palau (NDBP). Palau is heavily dependent on imported diesel fuel for its power generation. The unprecedented high costs associated with imported diesel fuel in 2007 and 2008 resulted in rising local energy costs (electricity, fuel for transport, etc) thus intensifying hardship on to the people. As a long term solution Palau opted to promote energy efficiency programmes beginning with energy efficient homes. By putting in energy efficient measures in the homes is projected to reduce electricity consumption to about 15%.

The total project cost is USD 500 K. A National Task Force (NTF) and a Technical Team have also been established. While the NTF has the overall oversight of the project, the Technical Team provides technical advice guidance to the NDBP on the required energy efficiency measures most suitable for the Palau environment. On this, a set of criteria has been developed that determines the level of subsidy the homeowner gets from the bank for building his new home. The maximum subsidy a homeowner gets is ten thousand US dollars (US \$10K). So far one new home has been completed with two others at the final stages of completion. In addition the NDBP is now processing an additional 12 applications from new home owners.



A completed model home



Inside look: light wall colors, ceiling fan, fully openable windows, and combinations of tinted, casement & awning



Compact fluorescent lamps are used in the

(iii) Samoa

The Samoa project has three components: (i). Transport fuel substitution with coconut bio-fuel, (ii) Promotion of non-motorised transportation and (iii) Demonstration Gasification project. This Samoa project will contribute directly to reducing Samoa's Greenhouse Gas (GHG) emissions and help support emissions control under the United Nations Framework Convention on Climate Change (UNFCCC). Its goal is to reduce the carbon emissions in the land transport and electricity sectors through energy efficiency involving the development of coconut oil as a suitable biofuel as well as the development of biomass energy from wood gasification. The project is in line with Samoa's National Policy on Combating Climate Change (NPCCC); National GHG Abatement Strategy 2007-2017 (NGHGAS); National Energy Policy (NEP); and the Strategy for the Development of Samoa 2008-2012 (SDS).

The total project budget is USD 1.3 million. Like the RMI, the Samoa proposal was re-confirmed during the JC4 meeting and implementation has just started. Although Samoa had an earlier version which was endorsed during the JC2 meeting, they decided to add in a new component (gassifier) to the original proposal and that caused the delay to the start of the implementation because the proposal had to be vetted again by the Technical and Joint Committee. Implementation on the ground is being handled by three organisations, the Ministry of Natural Resources and Environment (MNRE), the Land Transport Authority (LTA) and the Renewable Energy Research Institute (RERI). The overall coordination for the project is the responsibility of the MNRE. Project coordinators in each of the three organisations have been recruited. Work plans for the three components of the project have been developed and endorsed by the National Task Force. Work on the land transportation system is progressing with the LTA recruiting a consultant to provide advice on matters related to land transportation. This is a short term consultancy which will cover both motorised and non-motorised systems, institutional arrangement, vehicle efficiency, infrastructure standards, funding mechanism and other related regulatory issues.

(iv) Tonga

The Tonga project focuses on the rehabilitation of solar home system in two outer islands in the Ha'apai group. Altogether there will be 46 solar home systems installed in the islands and the total project costs allocated is USD 206K. The Energy Planning Unit (EPU) in the Ministry of Lands and Natural Resources is coordinating the implementation of the project.



Recently installed solar system on Mango Island

Tonga has a Renewable Energy Policy that has been endorsed by the Kingdom's Cabinet. The policy highlights Tonga's intention to promote alternative sources of energy to reduce its dependence on imported petroleum fuels. Using solar energy for electricity generation eliminates the trouble of shipping petroleum fuels to the outer islands.

The implementation of the Tonga project is relatively in an advanced stage compared to the other countries. The actual rehabilitation of the solar home systems in the two islands, Moungaone and Mango is now complete. The solar home systems in both islands have been commissioned and now operating. The construction work was carried out by technicians



A Technician and the home owner with his children admiring a completed solar system.

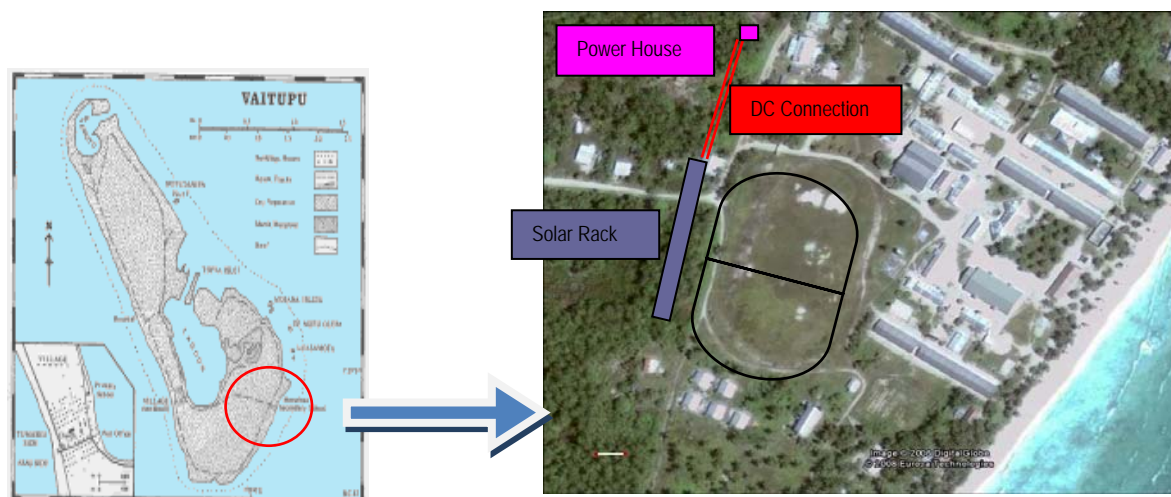
from the Ha'apai Solar Electrification Incorporated Society under the supervision of the Senior Energy Officer in the Tonga EPU.

(v) Tuvalu

The Tuvalu project, A Grid Connected PV System – fits in well with the aspiration of their National Development Strategy (Te Kakeega II 2007 -2015), i.e. “the provision of reliable and affordable electricity services together with the supporting infrastructure in outer islands.” The project aims to reduce dependence in diesel generation and reduce operational costs to the Tuvalu Electricity Corporation. In addition it will bring about a savings of about 109 tonnes of CO2 per annum (assuming 30 % efficiency).

The project is being coordinated by the Tuvalu Electricity Corporation (TEC). The implementation is progressing well with the tender for the design, supply, and installation being awarded to Eco Kinetics, a company that specialises in designing and installation of renewable energy systems in Australia and the Pacific region. It is envisaged that the construction will begin in late July with the target to commission the project in November. The project is being used as a training exercise for technicians in Tuvalu and from other countries in the design, installation and maintenance of grid connected PV systems. This component is being coordinated by the Secretariat of the Pacific Regional Environment Programme (SPREP) under its Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project (PIGGAREP). IUCN-Oceania and SPREP have agreed on a collaborative arrangement that will help to maximise their ability to deliver on their respective energy programmes.

PROJECT SITE ON VAITUPU



(vi) Vanuatu

There are three components to the Vanuatu project: (i) wind resources assessment; (ii) rehabilitation of solar home systems in Santo and Malekula; and (iii) a community based small hydro project. The project is being coordinated by the Energy Unit (EU) and the total project budget is USD 1.0 million.

Vanuatu has an Energy Policy which has been endorsed by the Council of Ministers. The policy promotes the use of renewable energy especially, solar wind and hydro. The project in Vanuatu is likely to bring about an annual saving of USD \$5,000 in fuel cost. In addition, the project is estimated to save about 118 tonnes of CO₂ emission (replacement of diesel with hydro and assuming 20% efficiency).

After some slight delay in the implementation, the progress has picked up with the following activities being carried out:

- (a) Recruitment process for a Project Coordinator is underway;
- (b) Review of data for Talise hydro was tendered out and is now being awarded to GHD International, a company that specialises in project development and management with a lot of experiences in the Pacific. A preliminary report based on a desk evaluation of the original feasibility study has been produced. The review work is funded by the PIGGAREP project.
- (c) Scoping mission for the purpose of identifying potential sites for wind assessment is now underway. This exercise is being carried out by staff in the EU; and
- (d) Scoping mission to assess the scope of the work needed to rehabilitate the solar home systems in Malekula and Santo is also underway. This work is also being undertaken by staff from the EU.

2. Special Energy Initiatives

These projects are selected by IUCN-Oceania based on prescribed criteria. These initiatives focus on the following themes:

- practical implementation of various renewable energy technologies, approaches and methods that demonstrate improvement in livelihoods and the preservation of biodiversity
- raising awareness of the general public to the environmental problems and impacts of unsustainable energy systems within the Pacific region. One initiative that has started under this category is the promotion of non-motorised transport systems focusing mainly on the promotion of cycling. Several Pacific Islands Countries are ideal for cycling because they are relatively flat. Discussions on how cycling can be promoted in the Pacific is underway with Velocity Cycling Club, a Fiji based cycling club that promotes cycling for recreation. Building on the experience of the Velocity Club, the intention is to incorporate the environmental and health benefits of cycling. Discussions have been undertaken with the Secretariat of the Pacific Community (SPC), an inter-governmental regional organisation that runs a community health programme for equity contribution to promote the programme. Preliminary discussions have been very positive with SPC agreeing in principle to be a partner on this initiative. It is proposed to first focus the project in Fiji and Tonga. Discussions have also begun with Tonga Trust (a member of IUCN) and they have shown a keen interest to promote the initiative in Tonga and they have produced a draft outline of how the initiative is to be promoted in Tonga.

- the development of a roadmap for a clear pathway for a national energy sector development plan. This will include national dialogue forums where all key stakeholders, from implementers to users, policy makers, politicians and donors discuss and develop a national energy strategy for the country. On this initiative, IUCN-Oceania has supported the development of a road map to help the Government of Tonga achieve its objective of realising 50% of its energy balance derived from renewable energy sources. This project is being initiated by the Office of the Tongan Prime Minister and the World Bank is taking the lead role in coordinating the development of the road map. An Energy Task Force has been established with membership comprising of development partners including the World Bank, Asian Development Bank and the European Union. Secondly, discussions have also taken place with the EU-supported Renewable Energy Project in five Pacific islands (EU REP5 Programme) to jointly hold consultation process in the development of the Palau National Energy Policy (NEP). The NEP is an initiative of the EU REP5 Programme and IUCN-Oceania can add value to the process by facilitating consultations with key decision makers, including ministers, donors and development partners and community leaders. IUCN feels that consultations with these stakeholders will help in generating a broader understanding of the energy policy framework and its benefits resulting in its general acceptance by the public.
- proposals to evaluate existing projects/programs and collect the lessons learned and the best practices. It will also include projects that focus on assessments of the environmental impacts of energy systems. An initiative that is being proposed is to develop a Terms of Reference and a clear guideline for environmental impact assessments (EIA) and strategic environment assessment (SEA) for some selected energy projects in the Pacific. Linking to the EIA and SEA is the need to have a clear understanding of the ecosystems services that underpin a particular energy system. On this, IUCN-Oceania with the help from IUCN HQ has held preliminary discussions with the Fiji Electricity Authority for an upstream assessment and valuation of the ecosystem services on the Monasavu hydro project catchment area.

A total of €250K is being earmarked for these initiatives and all Pacific island countries are eligible to participate. IUCN-Oceania is promoting partnerships with NGOs, Civil Society Groups, the Private Sector and community groups.

Staffing

There are now two staff members working on the energy programme, the Energy Programme Coordinator and a Project Assistant (PA). The PA was recruited in February. One of the responsibilities of the PA is to develop ways of creating more visibility of the energy programme within and also outside the IUCN programme of work. Since her recruitment the PA has developed a brochure that has been circulated to all participating countries and widely to interested parties and a dedicated webpage for the energy programme within the Oceania webpage. The PA is also responsible for updating and monitoring the project budget. This particular activity is carried out in close consultation with the Oceania Regional Office (ORO) Finance Section. In addition the PA is responsible for

travel arrangements and assists in general administrative matters. Apart from her work on the energy programme the PA is also responsible for the ORO monthly news letter.

Budget

The total budget supporting the programmes activities is 4 million Euros. Out of this €3 million is provided by the Government of Italy and €1 million by the Government of Austria. A Financial Report covering the period January 09 to May 09 is provided as Attachment I. All six country projects have their respective budgetary allocation. Disbursements of project funds to countries are carried out on a quarterly basis and these are released to the countries upon submission of quarterly reports including financial reports.

JC Meeting

The Director of ORO and the Energy Programme Coordinator attended the JC4 meeting in New York on 16 February. The meeting which was held at the UN conference Room 6 was well attended by representatives of the Pacific SIDS, the governments of Italy and Austria and a representative from the City of Milan. Amongst the things discussed during the meeting include the progress of the country projects and new projects. On the former the Solomon Islands and Fiji reported on the progress of their projects with the representatives highlighting their satisfaction with the progress made so far. The Director ORO reported on the progress of IUCN managed countries' projects, highlighting the progress of the project implementation in each of the six countries. He said that through the project IUCN is able to contribute positively to the discussions and dialogue on energy development and climate change in the Pacific region. The Director further added that IUCN's contribution in the area of ecosystem management and biodiversity conservation brings in a new dimension to the energy programmes in the region.

CSD17 Side Event

The Energy Programme Coordinator attended the 17th Session of the Commission on Sustainable Development side event on *'Adaptation to Climate Change in the Pacific: A Model for International Cooperation for Sustainable Development'* at the invitation of the Italian Ministry of Foreign Affairs. The meeting was convened for the purpose of discussing and highlighting the cooperation model between the Pacific SIDS and the Governments of Italy and Austria. There were presentations from four participating Pacific SIDS, each highlighting the type of funding approach used on their projects and how the approach has helped in progressing the implementation of their respective project. The Energy Project Coordinator used the opportunity to highlight the value adding contribution of IUCN to the cooperation. These include the fact that IUCN is an environmental based organization with special emphasis on nature conservation and has a considerable wealth of knowledge on biodiversity and the impacts of climate change on these. Furthermore IUCN has a membership of over 1000 governments, states, institutions, non-governmental organizations and civil society groups globally and has access to over 11, 000 scientists who provide science based advice on environmental and climate change related issues. IUCN provides the technical and management expertise that helps to bridge the gaps that exist in these areas in the countries. Further IUCN provides technical assistance in the development and implementation of the countries work plans, including advice on appropriate policy framework for energy and climate change. Central to this policy framework is the emphasis on safeguarding the environment and people in the context of expanding energy systems.

Regional Cooperation

The Pacific SIDS EESLI continues to strengthen its working relation and building synergies with other energy and environment programmes implemented by regional organisations and development partners working in the Pacific region. It is now an active member of the CROP Energy Working Group. As reported earlier (see Special Energy Initiative) the Pacific SIDS EESLI is now working closely with other development partners in the development and implementation of an energy sector development plan for the Kingdom of Tonga. The partnership with PIGGAREP has enabled some project components to receive funding, e.g. technical training and capacity building, impact assessment and reviewing and updating local resource data, Lessons learned from project implementations and country experiences have been shared with regional organisations and development partners and vice versa.

The Energy Programme Coordinator and the PA together with the Director of ORO and the Senior Programme Officer, Energy Ecosystems and Livelihoods from the IUCN Headquarters participated in the Pacific Energy Ministers Meeting (PEMM) and related Regional Energy Meeting (REM) held in Tonga in April. The meeting provided an opportunity for the Pacific SIDS EESLI to brief participants on its activities and highlighted on the importance of factoring ecosystem management and biodiversity conservation in the energy agenda in the Pacific region.

Through its involvement with the CROP-EWG, the energy programme has built IUCN-Oceania's standing as a key player in energy sector development in the Pacific region. Similarly, it has created greater visibility and awareness amongst PICs, regional organisations and development partners on the cooperation between the Pacific SIDS and the governments of Italy and Austria.

Challenges

The allocation of additional resources on a timely basis to meet the countries expectation will be crucial to meeting the project timeframe as expected in the Project Document. There are two countries that will need extra funds in order that all components of their projects receive funding and these are the Marshall Islands and Samoa.

In most cases the country focal points have other responsibilities apart from coordinating the implementation of the energy project. Dealing with matters related to the project requires longer timeframes as he/she has to attend to other pressing issues.

Several countries in the region have seen a dramatic increase in the cost of living and basic items since the onslaught of the global financial crisis. It will be interesting as the countries advance further with the implementation of their projects to see whether this financial meltdown has any negative impact on the projects especially where procurement of materials, equipment and services is required.

There is a weak link in the current set of projects with ecosystem conservation and enhancement of livelihoods. Both these elements are central to the overall goal of the

project. IUCN however, is trying to address this challenge through the special initiative component.

Conclusion

Overall the project implementation is progressing smoothly as all countries have had *Work Plans* in place and have commenced with their implementation. While some of countries have reached an advanced stage e.g. Tonga and Palau, there is a need to work closely with the others to ensure that delays are minimised.

Collaboration and building synergies with other energy programmes being implemented in the region has generated a greater understanding of the Pacific SIDS Energy Programme and its goal. Moreover the energy programme has created more visibility to the cooperation between the Pacific SIDS and the governments of Italy and Austria. The partnerships between Pacific SIDS EESLI and the Italian and Austrian Governments offers opportunities in bridging knowledge, governance and good practices, innovation and technology gaps between developed and industrialised countries on the one hand and developing small island nations on the other. It is a partnership that is worth pursuing and replicating.

ATTACHMENT I

PROJECT FINANCIAL REPORT MAY 2008 - MAY 2009

PARTICULARS	BUDGETED		BUDGETED	ACTUAL	ACTUAL	TOTAL	VARIANCE
	Euro	USD	USD	2008	2009	D + F	% cell C/J
			2009	USD	USD	FY 08/09	Actual/Bud
Personnel Costs - IUCN Staff							
-Coordinator - Anare Matakaviti/Salote	181,500	239,507	79,836	49,500	35,516	85,016	35.50%
-Institutional/Energy Policy Specialist	103,500	136,579	45,526	Vacant	-		0.00%
-Admini/Accounting Services	44,000	58,062	19,354	18,409	8,904	27,313	47.04%
-Project related Costs(contracts/consultancy) - PL, TK,BoC	96,279	127,050	42,350	7,050	12,228	19,278	15.17%
Other Non- IUCN Consultant	38,721	51,096	17,032	-	3,042	3,042	5.95%
-Consultant - HQ	45,000	59,382	19,794	11,116	12,000	23,116	38.93%
Travel Costs - IUCN Staff	54,000	71,258	23,753	14,443	14,415	28,858	40.50%
Travel Costs - Other Personnel							
-Joint Committee, regional and International	35,000	46,186	15,395	25,195	2,573	27,768	60.12%
Office Equipment	5,000	6,598	2,199	2,427	1,534	3,961	60.03%
Telecommunications, reporting and Micellaneous	15,000	19,794	6,598	4,290	2,269	6,559	33.14%
W.Shop TVL & Perdiems - Others	45,000	59,382	19,794	9,419	430	9,849	16.59%
Advance to Implementing agency							
- 10 person - months of misc consultanting services	100,000	131,960	43,987	-	-	-	0.00%
- Midterm and final evaluation	26,000	34,310	11,437	-	-	-	0.00%
advance to implementing partners' - National Projects (approved by the JC)	2,675,847	3,531,048	1,177,016	111,133	963,616	1,074,748	30.44%
Palau	354,610	500,000	166,667	69,000	21,016	90,016	18.00%
Samoa	496,454	700,000	233,333	-	295,133	295,133	42.16%
Tonga	146,489	206,549	68,850	2,339	196,000	198,339	96.03%
Tuvalu	567,376	800,000	266,667	38,494	451,466	489,960	61.24%
Marshall Islands	401,698	566,394	188,798	-	-	-	0.00%
Vanuatu	709,220	1,000,000	333,333	1,300	-	1,300	0.13%
- Special projects, events and studies	250,000	329,900		-	-	-	0.00%
Contingency (5% of total)	173,153	228,493	76,164	-	-	-	0.00%
Project Overhead Fees	112,000	147,795	49,265	-	28,501	28,501	19.28%
	4,000,000	5,278,400	1,649,500	252,981	1,085,028	1,338,009	25.35%

Note: While the financial statement totals €4 million (€3 million-Italy, €1 million – Austria), all expenditures to date are against the Italian portion.