

*Risk, clean energy and climate change  
finance for small island states – a case  
discussion from Samoa*

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## Small island State facts:

- *There are currently 39 small island developing States in three geographic regions: the Caribbean; the Pacific; and Africa, Indian Ocean and South China Sea.*
- *Small islands face a unique set of challenges due to their small size and remote location. They are also highly vulnerable to climate change and natural disasters.*
- *While they have many things in common, the standards of living among small islands differ widely.*
- *For small islands in the Pacific, tuna fisheries contribute more than 10 per cent of GDP and in some islands more than 50 per cent of their exports. Fish also contribute at least half of total animal protein intake in some small islands.*
- *In Samoa and Fiji, coconut trees and their products account for 30 per cent of GDP and the majority of small-scale farmers are dependent on coconuts for their livelihoods.*
- *Small islands are the custodians of 15, or 30 per cent, of the 50 largest exclusive economic zones. Kiribati, the largest small island developing state in terms of ocean territory, has the 13th largest exclusive economic zone on Earth.*
- *Several small island developing countries, including the Maldives, Tuvalu and several Caribbean island States, are working to achieve “climate neutrality” through the use of renewable energy and other approaches.*
- *2014 was the International Year of Small Island States (UN).*

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## Summary

The purpose of this paper is to: i) generate further interest in the challenges faced by small scale entrepreneurs in small island states that have difficulties securing climate financing, largely due to their necessarily small scale of operations; and ii) to document some experiences from Samoa on this topic in order for those valuable lessons to be of some practical use and value to other SIDS around the world.

The paper is in three parts: Part One introduces the recent work in Samoa and the conceptual framework of the remainder of the paper, including the basic premises and assumptions inherent in clean energy and climate financing for small island states. Building a business case and basic business acumen is recognised as key factor for successful small-scale entrepreneurship. For the private sector in many small island states, capacity in this area is the missing link between good ideas and developing appropriate, practical solutions and attracting financing.

Part Two then takes up the lessons and findings from the initial work carried out with the private sector in Samoa and draws on the literature and recent experiences to describe some aspects of the situation small island developing states are contending with in their endeavors to develop clean, green energy solutions and turn waste into value added products. Two attempts to garner support from the Asian Development Bank were not successful. Part Three summarizes some of the most valuable lessons learned for small islands looking for climate finance for small-scale practical solutions that are both appropriate and affordable.

With a title like this, the reader might expect the focus of Part One to make the case that indeed small islands need clean energy (as separate perhaps from cheap or affordable energy). This topic is well covered in the literature, therefore we have discussed the proposal development process and funding challenges (and practical lessons learned) rather than developing the case that small islands need clean energy. Suffice to say that small islands contribute almost nothing to global emissions; small islands need more affordable reliable clean energy sources produced locally with a small environmental/health footprint while at the same time providing opportunities for local employment and economic diversification and growth.

Simply stated, climate finance refers to financial resources from various sources that are used for climate change mitigation and adaptation projects and programs. Buchner (2011) provides more detailed academic definition of the term to include climate specific support mechanisms and financial assistance for mitigation and adaptation activities to enable the transition towards low-carbon, climate-resilient growth and development through capacity building, R&D and economic development.

## **PART ONE:**

### **Small islands do need clean energy, clean water and waste recycling**

#### **Background**

Currently, Pacific Islands are heavily dependent on imported fossil fuels for meeting the bulk of their energy needs. However, this situation is going to be unsustainable in the long run with rising fuel costs and the growing trade deficits faced by many Pacific Island Countries (IMF, 2014). Renewable energy technologies, used in a number of demonstration projects, including solar, wind, hydropower and coconut biofuel have proven to be technically feasible options for electricity production in remote locations in recent years.

The results from a 2007 study by SOPAC (Woodruff and SOPAC 2007) indicated that renewable energy technologies can provide a cost-effective means of supplying electricity to rural areas,

where distances are long and transportation costs are high, and population densities and per capita demand for energy is low. The more recent literature strongly supports these findings.

**Energy sector** This we know: the cost of imported fossil fuels into the Pacific Island Countries (PICs) has a significant dampening effect on their economies and raises costs of production in virtually all sectors. For PICs, the interconnection between energy services and economic development is further complicated by five factors:

- (a) heavy dependence on imported petroleum for commercial energy needs;
- (b) ongoing loss in preferential access to OECD markets (Elbehri - UDSA, 2006);
- (c) vulnerability to natural disasters and the adverse impacts of climate change, resulting primarily from the growth of global fossil fuel related emissions;
- (d) limited integration of the energy sector with the other sectors so as to maximize collaboration and the efficient use of financial resources, and
- (e) many SIDS experience high and often rising costs for electricity, supply interruptions, as well as vulnerability to oil price shocks<sup>3</sup>.

Most PICs remain heavily dependent on traditional forms of biomass-based energy (fuel wood from natural forests, coconut shells, husks and stem wood, residues from crops such as coffee and cocoa) for cooking purposes that can make food preparation hazardous to the health, in particular women and children. As with fossil fuels, current biomass usage is an inefficient use of the resource.

Most small islands, evidenced by the extensive discussions in the literature, share the critical need for alternative clean and green energy sources.

**Potable Water sector** The water sector in the Pacific has received increasing attention in recent years as a result of growing stresses on potable water supplies due to both rapid urban population growth and expanding needs of rural populations. In Samoa, the purchase of potable drinking water is often a major component of household expenditures given the suggested need to boil the water for drinking that is currently delivered through the existing reticulated water supply system in the capital, Apia. In rural areas, surface water and groundwater are the only sources of water used for water supply provision, with the exception of rainwater harvesting practiced widely in the Falealupo Peninsula and in otherwise isolated and rural households. Surface water provides approximately sixty-five percent of the water supply and groundwater

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<sup>3</sup> SIDS DOCK Support Program for Small Island Developing States. SIDS DOCK is an initiative among member countries of the Alliance of Small Island States (AOSIS) to help SIDS transform their energy sectors and address adaptation to climate change. Source: <http://www.esmap.org/node/3033> accessed 6 November 2014.



thirty-five percent. Future demand for accessible, affordable and safe drinking water is a critical concern in Samoa, as it is likely to be elsewhere in the Pacific (SOPAC 2013).

## **Recycling sector**

Overall, recycling has been mainly driven by local companies with less involvement of the Government for the past 30 years. Recycling items are mostly scrap metals and thus plastic bottles, papers, cardboards, glasses including bottles and others are still not economical to be included. These materials while considered as recyclable resources in developed nations, remain as waste in Samoa. The government has recently made an attempt to promote recycling by collaborating with some recycling companies to improve public awareness, support and participation in the recovery of recyclable waste items for recycling. The government is also planning to put in place some recycling levies through the application of a Container Deposit Levy and etc. to facilitate the recovery, collection and shipping of most waste items overseas. These types of funding and economic instruments will effectively promote recycling operations in Samoa and may increase the volume of items recovered for recycling purposes. Three recycling companies exist in Samoa: West End Recycle Company, Demolition Recycle Company and Pacific Recycle Company. Only the latter has partnership with MNRE. Pacific Recycle Company collects aluminum, car bodies, batteries, metal, brass, copper, lead, stainless steel, radiators, low and high grade PVC and electric motors which are segregated from the general rubbish. About 20 waste pickers recover these materials and deposit these at the Pacific Recycle Company's depot near the landfill.

MNRE, in collaboration with J-PRISM, Pacific Recycle Company and Jaffa's Sanitary System Contractor is implementing a pilot project on collection of recyclable materials in the urban areas. The project targets 3 villages, 5 schools, 3 supermarkets and 3 hotels. Data collected from these pilot sites will be used to formulate a plan for a recyclable collection service covering the whole of Samoa. Currently, only general wastes are collected twice a week in the households and twice daily in commercial areas. Bulky wastes are collected thrice yearly. There is no recyclable waste collection service in operation yet.

## **The Case of Samoa**

A technical assistance project was developed to support small scale private sector contributions to climate resilient development in three Pacific countries; Samoa, Tonga and PNG, funded by the Global Climate Change Alliance (GCCA) Climate Support Facility under the GCCA Intra-ACP Programme, implemented by the Secretariat for the Pacific Regional Environment Programme (SPREP) in Samoa.

These countries were selected because they are the three countries with national projects under the Pacific Regional Pilot Programme for Climate Resilience (PPCR), one of three programme areas supported by the multi-donor trust fund called the Climate Investment Funds<sup>4</sup> (CIF), managed by the World Bank. In November 2012 an additional allocation of USD\$70.0 million in concessional funds was made available by the CIF to innovative private sector businesses and companies, to develop ideas and projects that could qualify for concessional financing through the CIF and that would engage the private sector in the PPCR. It was called the PPCR Private Sector Set Aside<sup>5</sup>. Eleven proposals for utilizing these funds were submitted globally. In September 2013, and six projects were approved (four with conditions).

Working with SPREP it was agreed to focus the project proposal to the CIF initially on Samoa and to then use this experience to take the process to the other two countries, due to time constraints and the cost of travel in the Pacific. The CIF is a non-technical administrative unit, sharing due diligence for project development with the multilateral development banks around the world<sup>6</sup>. This means that the Banks are responsible for promoting, assisting and vetting all proposals for this funding avenue, prior to the submission to the CIF Experts Group to decide on the successful projects. There have been two rounds to date (November 2013 and June 2014).

The preparation of these proposals was facilitated by two small technical assistance and capacity building grants from the Climate Support Facility under the GCCA Intra-ACP Programme, which provided some initial support to the 'home-grown' private sector initiatives identified in Samoa. The idea was to generate interest from donors and investors for small-scale initiatives, which is what is needed throughout small island developing states around the world. Two unsuccessful attempts were made to request ADB assistance and support for the Samoan projects to apply for the Set Aside Funding from the CIF. The remainder of the paper is not about those attempts but rather what has been learned as a result.

### **A small group of entrepreneurs in need of assistance**

In July 2013, a small technical assistance project was launched to work with SPREP in developing a project proposal to the CIF (Pilot Programme for Climate Resilience – Private Sector Set Aside) to deliver resources for a regional programme for the Pacific aimed at strengthening

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<sup>4</sup> The Climate Investment Funds (CIF) are a unique pair of financing instruments designed to pilot what can be achieved to initiate transformational change towards low-carbon and climate-resilient development through scaled-up financing channeled through the Multilateral Development Banks (MDBs). Donor countries have pledged over US\$6 billion to the CIF (<https://www.climateinvestmentfunds.org/cif/node/1> accessed 12 November 2014).

<sup>5</sup> Activities financed by the PPCR Private Sector Set Aside are aligned with the objectives of endorsed Strategic Program for Climate Resilience (SPCR) of one of the eighteen countries or two regions engaged in the PPCR: (Bangladesh, Bolivia, Cambodia, Dominica, Grenada, Haiti, Jamaica, Mozambique, Nepal, Niger, Saint Lucia, Saint Vincent and the Grenadines, Papua New Guinea, Samoa, Tajikistan, Tonga, Yemen, Zambia, and the Pacific or Caribbean regions).

<sup>6</sup> The CIFs are implemented jointly by the MDBs: African Development Bank, Asian Development Bank, European Bank for Reconstruction and Development, Inter-American Bank, and World Bank Group.



the private sector engagement in activities associated with reducing countries' exposure to climate risk and uncertainty. The project was titled; "*Clean Water, Clean Fuel: Resilient Infrastructure in Pacific Island Countries, a Private Sector Initiative*", and addressed solutions in the water and energy sectors to address demand for affordable clean drinking water, affordable locally produced diesel fuel alternatives and waste recycling in Samoa. At the outset it was clearly stated that this was an integrated project, in that it covered both mitigation and adaptation issues, and that there were clear synergies and linkages between the various components, although these were developed separately.

Initially, six projects were proposed as follows:

1. Solar water purification
2. Coconut biofuel production
3. Energy production from waste (tyre recycling)
4. Organic waste recycling (sustainable fertilizers and renewable energy)
5. Sustainable buildings
6. Solar Hydro Village Energy

The projects were each prepared using the following similar subheadings for consistency (as far as possible) to also be in line with the basic requirements of the format for the CIF PPCR Set-Aside concessional financing.

Of these six projects, four were selected to be included in the proposal based on; i) an initial pre-feasibility overview (can objectives be realistically achieved within cost estimates), and ii) the status of the business case or business planning for the proposed idea. At this stage, the scientific underpinning was not questioned given the nature and expertise of the companies proposing these ideas.

While all four projects had their merits, a particular mention should be made that the solar water project also included an MOU with a micro-finance institution to accommodate women's groups to purchase one or more units to generate income and provide communities with both cheap potable water and livelihoods opportunities.

The proposal then contained four main projects:

- i. the first was a **woody biomass/coconut biofuel** (pyrolysis and gasification<sup>7</sup> research and development):

A near-pyrolysis method of distillation was developed in Australia for disposing of cotton, rice and wheat waste in fire-prone areas, with the ancillary benefits of producing a near-diesel by-product. The method can be modified to use coconuts, coconut palms and

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<sup>7</sup> The method has since been modified to focus on disposal of end-of-life car tyres used in the second project described above.

fronds as the feedstock. In order to safeguard food security it is important that only fallow coconut palms be processed and that nuts used for food security be set aside. Replanting of fallow plantations would be a good way to secure feedstock and maintain food security. A further modification was the use of invasive tree species as a further feedstock. When cyclone Evan passed over Samoa twice in 2012, the intense rainfall uprooted some invasive tree species and in a cascading set of events produced immense damage at the river mouths in Apia. The objectives of this project were:

1. Provide a gasoline/diesel substitute that can be used by transport and industry;
2. Provide excess energy for the electricity grid (syngas and heat exchange);
3. Provide a waste solid (activated carbon) that possesses significant export potential plus ash for local soil amelioration.

Of particular interest in this project were the opportunities the company termed “re-engineering”, as follows:

*The overarching aim of this Project is to re-engineer the basic pyrolysis process to determine whether similar results can be achieved using whole coconut palms and invasive tree species. This includes the trunk, roots, fronds, nuts, husk, etc. It is to be remembered that in senile plantations the proportion of nuts in the total weight of palms will be insignificant. Thus the aim is to produce directly usable oil from the woody biomass. This has implications for the utilization of woody biomass from other species<sup>8</sup>.*

ii. **Clean energy from waste recycling**; the project had the following objectives:

1. To help satisfy the ever growing energy needs of Samoa using Clean Renewable Energy Technology;
2. Create a new industry in Samoa that proves to be feasible in its creation, operations and co-operations with NGO's and Government Ministry's and bodies.
3. In co-operation with the only energy retailer in Samoa (Electric Power Corporation) reduce Samoa's vulnerability to oil prices and to deliver a more affordable price that will be passed on to consumers.
4. Increase imports and exports for Samoa, utilizing its freight and shipping agencies.

This project was going to be the first in the Pacific to introduce Pyrolysis biomass technology encompassing the use of waste (end-of -life) tyres to produce energy and Carbon Black for export. In simple terms waste tyres are used as feed into the machinery

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<sup>8</sup> Cunliffe, S (2013), *Resource Text – Relevant documentation in support of the Concept Note Proposal to the Asian Development Bank*, July/August 2013, (documentation prepared for SPREP under technical assistance grant (Work Order #29) with the Climate Support Facility under the GCCA Intra-ACP Programme.

to produce high-grade carbon black and electricity. This technology has zero harmful emissions based on a method developed by Queensland University in Australia.

- iii. **Solar water purification;** the innovation of this technology is multifaceted. Primarily, it can take water with a high level of pollutants (including sea water, household liquid waste, rainwater, polluted fresh water) and purify it (gravity feed) using the sun's energy to produce potable distilled water and salt (in the case of sea water), an additional marketable by-product. A one-meter square panel costing about \$450 can support a household with around twenty litres per day of pure uncontaminated drinking water for a minimum of ten years<sup>9</sup>.
- iv. **Solid and liquid waste recycling;** Waste generated from shipping is a major concern in Pacific Island Countries. This includes human and food waste from cruise ships, waste from cargo shipping operations, fish waste, and disposal of anti-fouling and waste oil from all shipping. The lack of appropriate handling facilities in the Pacific Island Countries presents an opportunity to deal with the pollution aspects by way of creating energy from this waste source. Utilizing a port or land based collection facility the waste can be sent through an anaerobic bio digester system to create natural gas, compost and irrigation water. The natural gas produced could be used for a variety of processes (lighting, cooking or electricity generation) and would offset imported natural gas. The proposed outputs from this project include:

#### Gas Production

1. Build a state of the art biomass digester based on the latest biogas technologies available;
2. Significantly reduce/eliminate landfill from green wastes and sewage that is releasing methane gas (a greenhouse gas) into the atmosphere;
3. Replace high carbon footprint imported cooking gas;
4. Reduce high cost imported gasses (fuel) reducing cost of living and increasing likelihood of adoption by families as a cost effective cooking alternative to wood, electricity and kerosene.

#### Grey water and compost

1. Provide a cost effective replacement for imported fertilizers or to be used as a feedstock in local fertilizer production
2. Provide an environmentally friendly source of plant nutrition in support of Samoa's drive toward food security and sustainable agricultural production.

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<sup>9</sup> See <http://www.fcubed.com.au/aspx/carocell-panels.aspx>.

These practical ideas, if funded, would be subject to oversight by SPREP for technical support, monitoring and evaluation activities throughout project management. This was the general plan for which financial support was to be sought.

### **The business case could have linked the four proposals**

It should be noted that an 'overall' business case was not prepared for these projects to link all four together. It was hoped that assistance with this kind may have been offered by ADB. We later learned that this was unlikely to be the kind of assistance available from the Bank. While each of the four projects did have quite well developed business plans (of mixed quality and depth), they focused largely on the financials, the market and the product value. SWOT analyses were absent and little information was provided on legislative and administrative requirements beyond occupational health and safety. Community social benefits, gender sensitivities, communications strategies and other attributes of a solid business case could have strengthened the collective proposal. This was not done once it became clear that the Bank was not able to support these projects to make the required submission to the CIF in a timely fashion.

The development of a business case is an under-rated tool for the development of concepts and ideas not only for businesses but for various aspects of business and project management (Kerzner, 2013)<sup>10</sup>.

The UN Global Compact publication on making the business case for climate change adaptation (UN Global Compact, 2012) summarizes the added value of good business planning by the private sector in the following diagram:



**Figure1:** The Business case for climate change adaptation. **Source:** UN Global Compact (2012).

The four elements in this diagram are a good illustration of the business-oriented approach needed by successful entrepreneurs; keep costs low, keep the market happy and growing, be ready to access alternative financing opportunities and maintain a solid transparent business

<sup>10</sup> Project Management: A Systems Approach to Planning, Scheduling, and Controlling, Harold R. Kerzner, 2013, Chapter 23, page 10.



history. The light colored box behind these four elements has no label at present. We have learned in Samoa that this should be the link between all four elements; the link is partnerships and the lessons learned in Part Three provide some further detail.

### **The context of these proposals**

There are a number of basic premises upon which these proposals (and indeed this paper) have been constructed, not least of which are the experiences attained over the last eighteen months (2013 and 2014) aimed at gathering potential investment (grants, concessional finance, joint venture or other) to support a small group of private sector entrepreneurs in Samoa, to have their ideas realised and their business plans tested. These projects are all aimed at green energy solutions, waste to energy systems or recycling waste (organic and inorganic). They also have significant contributions to resilience building as adaptation measures to climate change – reducing ocean borne pollution, removing invasive tree species, improving land management and soil health, and reducing pressure on landfills.

Firstly, a key assumption: the private sector has much to contribute to the development and implementation of effective clean energy solutions, including sector-specific expertise, new technology, significant levels of financing, the need to be efficient and make cost-effective choices, and an entrepreneurial perspective.

Secondly, one basic premise is that for almost all small island states, the capacities exist (often requiring some external technical support) to design and develop appropriate systems and technologies (including policies, social acceptance) for non-polluting, sustainable and cost effective solutions to provide energy (and recycling systems) to expanding island populations dependent upon electrical products for both life and livelihoods.

The second basic premise is that there exists, in many, if not all, islands of the Pacific, small scale private sector businesses and organizations with both the skills and expertise to design and develop green and clean energy solutions appropriate to their circumstances. However, many, if not most, lack the business skills to take good ideas to the market although the interest and the willingness is there. This is not so well known.

The next group of basic premises is rather more debatable, but is however, drawn directly from the experiences of the authors, their organizations, and the two decades of project design, development and implementation experiences. These following points could be interpreted as assumptions for the discussion of clean energy and climate finance to follow. A number of these assumptions will be taken up in the paper, for example:

- SCALE – the needs of small islands cannot be compared to larger economies (climate finance, clean energy needs);

- **RISK** – while the risks are similar throughout the Pacific, the energy needs are not (building climate resilience is about managing risk and risk is determined by a number site-specific elements such as vulnerability, exposure and the hazards that affect an area or community);
- **BUSINESS CASE** – the paper makes the case for specific treatment (technical and financial support, Government regulatory revisions, knowledge and community trust) that is needed to support private sector entrepreneurs in small islands.

### **The second round of proposal preparation**

Following the successful allocation of CIF Set-Aside concessional financing to six projects from the first round, the CIF agreed to extend the initial offer of the Set-Aside funds for a second round. In the second round, four projects were successful, two from Cambodia supported by ADB<sup>11</sup>. Again the SCF\_GCCA agreed to support a second attempt at applying for the Set-Aside concessional funding. This time, the Bank suggested simplifying the proposal; so only two projects were selected to be developed in detail for the proposal in the appropriate format. The initial outline draft of this proposal forwarded to the Bank also met with a discouraging suggestion that ADB would not be able to move forward with this proposal to the CIF, for a second time, citing an inappropriate level of adaptation focus in the project. The proponents were asked by SPREP to present their view of the resilience building or adaptation aspects of their projects, to which SPREP technical staff added further information. However, there was no further discussion with ADB on this additional information offered.

Our attention turned to alternative sources of potential funding (NGOs, philanthropic organizations etc.) for any or all of the proposed projects on the table in Samoa.

We also further investigated the Canadian Climate Fund for the Private Sector in Asia<sup>12</sup>, managed by ADB<sup>13</sup>. Established in March 2013, the fund aims to catalyze greater private investment in climate change mitigation and adaptation in Asia and the Pacific. The fund aims to play a key role in helping to overcome leading edge technology risks and cost hurdles in order to initiate and scale-up projects to reduce greenhouse gas emissions and increase climate resilience. The fund is ADB's first concessional debt co-financing facility specifically oriented to support private sector operations to combat climate change. Most of the Pacific Islands are eligible developing members. Once again, the advise from the Bank was that this was not an appropriate funding mechanism for the types of projects we were in the process of developing in Samoa.

<sup>11</sup> Over USD\$75 million has been allocated under this funding mechanism. Notice of further rounds has not been made as yet although it is understood that the success of these concessional loans may lead to further allocations.

<sup>12</sup> See <http://www.adb.org/site/funds/funds/canadian-climate-fund-for-the-private-sector-in-asia> accessed in January 2014.

<sup>13</sup> ADB is presently administering \$1.5 billion from the Climate Investment Fund (CIF), which has become the largest source of co-financing for ADB's climate change program. ADB has also administered \$50 million of climate-related resources from the Global Environment Facility (GEF).

After an exhaustive series of investigations on the internet<sup>14</sup>, by email and direct discussions with key donors in the Pacific, given the now short time available to do this, the agreed candidates were:

1. The Clinton Foundation<sup>15</sup>;
2. The Carbon War Room<sup>16</sup>; and
3. The NAMA Facility<sup>17</sup>

There are no bilateral organizations in this list due mainly to the forward planning, accountability and fund allocation procedures (including national Government endorsement or non-objection) of these organizations making short-term financial support for projects usually not feasible. They require a longer planning horizon and these projects in Samoa were in need of support in the short term to maintain the momentum and enthusiasm of the group.

In short; the NAMA Facility<sup>18</sup> is still a long-term possibility that SPREP is considering for the future, it is not a short-term solution. Both the Clinton Foundation and the Carbon War Room continue to show interest in supporting these initiatives and it is likely that one or both of these organizations will be able to support these initiatives to some extent. Recent contact was very positive; the process is again slow, but the Climate Change Division at SPREP is continuing to maintain contact and communications with these potential partners.

## **PART TWO: Climate finance and clean energy**

### **Recent evidence – the need for climate financing**

The following pages illustrate a selection of initiatives and resources that provide clear evidence of both the knowledge and the understanding of both demand and supply of climate finance, particularly for small islands. Evidence of successful small-scale clean energy initiatives do exist, they are just all too infrequent.

Climate finance refers to financing channeled by national, regional and international entities for climate change mitigation and adaptation projects and programs. They include climate specific

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<sup>14</sup> While a number of NGOs were contacted and options discussed, without providing specific detail on individual organizations, the following two sites were key access points for those organizations fitting basic criteria as follows: i) currently/planning to be active in the Pacific; ii) proven track record on SIDS; iii) specialist on small islands; iv) climate financing background; and v) comprehensive approach to energy, finance, sustainability and climate resilience. a) .List of regional centers and networks on adaptation: [http://unfccc.int/adaptation/groups\\_committees/adaptation\\_committee/items/8848.php#nav](http://unfccc.int/adaptation/groups_committees/adaptation_committee/items/8848.php#nav) and 2. [Climate Action Network \(CAN\)](http://www.climateactionnetwork.org/) The Climate Action Network (CAN) is a worldwide network of over 430 Non-Governmental Organizations (NGOs) working to promote government and individual action to limit human-induced climate change to ecologically sustainable levels. <http://www.climateactionnetwork.org/>

<sup>15</sup> <https://www.clintonfoundation.org/>

<sup>16</sup> <http://www.carbonwarroom.com/>

<sup>17</sup> <http://www.nama-facility.org/start.html>

<sup>18</sup> The NAMA Facility aims to support the concrete implementation of highly ambitious projects that have the potential to catalyze transformational change towards sustainable low-carbon development. It is however a rather complex process of National Government collaboration with the NAMA Facility.

support mechanisms and financial assistance for mitigation and adaptation activities to spur and enable the transition towards low-carbon, climate-resilient growth and development through capacity building, R&D and economic development (Buchner 2011). Climate finance is particularly important for adaptation, for which significant financial resources will be similarly required to allow countries to adapt to the adverse effects and reduce the impacts of climate change (UNFCCC [http://unfccc.int/focus/climate\\_finance](http://unfccc.int/focus/climate_finance)).

The World Resources Institute is firmly of the opinion that large-scale financial investments from both public and private sources (and guided by smart and equitable policies) are required to transition the world's economy to a low-carbon path, reduce greenhouse gas concentrations to safe levels, and build the resilience of vulnerable countries to climate change.

We can now safely say that the evolving recognition of the need to finance climate resilience, adaptation and mitigation, separate from other environmental concerns of development in general, has been embraced by decision-makers around the world. Then why is it so difficult to generate interest in small-scale initiatives in small island states? How much climate finance is currently available (and accessible) to small islands? Is debt relief the answer? Or is direct budget support the best mechanism? In fact most Pacific Island countries have already agreed that direct budget support is in fact their preferred mechanism for climate finance delivery (AusAid 2013). This may not be the donor's preferred option however.

The Overseas Development Institute confirms the studies compiled and presented by Montes (2012) that developing countries' need for adaptation funding is between USD\$100-\$450 billion a year depending on the climate change scenario used. ODI research in 2013 indicates that developed countries since 2003 have contributed around USD\$2.2 billion leaving global adaptation grossly underfunded (ODI, 2013), especially those most vulnerable including small island developing states.

There are two important points here: i) of this USD\$2.2 billion of dedicated climate finance initiatives (to 2013), only fifteen percent supports adaptation; and ii) the effectiveness of this finance is made more complex by the unequal distribution of climate change impacts with some of the poorest countries also being those worst affected, again, especially small island developing states.

The Asian Development Bank has a number of climate financing mechanisms including for example the ADB Climate Change Fund (CCF) of around USD\$50 million available as co-financing, grants or technical assistance, even for relatively small projects<sup>19</sup>. Through CCF, ADB

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<sup>19</sup> For example, the ADB CCF funded the following: People's Republic of China: Concentrating Solar Thermal Power Development in the PRC (CCF: \$1,000,000) Sri Lanka: Strengthening Capacity for Climate Change Adaptation (CCF: \$700,000) Bangladesh: Strengthening Resilience of Water Sector to Climate Change in Khulna (CCF: \$600,000); <http://www.climatefinanceoptions.org/cfo/node/3326> accessed 24 May 2014.



provides grants to projects through technical assistance, or investments in the private and public sectors. In total, CCF has dedicated \$30 million towards mitigation activities—to lower carbon emissions, \$14 million for adaptation activities—to build resilience, and \$6 million for pilot activities in reducing emissions from deforestation and land degradation (REDD). It is unclear why this funding source was not available to Samoa, or not suggested as a potential source of support.

At the same time, ADB is supporting a range of investments in the clean energy sector throughout the region, including USD\$50 million in the Maldives (USD\$38 million grant and USD\$12 million from the CIF Strategic Climate Fund)<sup>20</sup>, projects in the Cook Islands for solar power generation, renewable energy solutions for Indonesia's remote islands and assistance to Nauru to deliver safe, reliable power, to name just a few. In addition, the Bank has raised over \$820 million of clean energy bonds since 2010 and continues its commitment to a policy of supporting clean energy development in as many sectors and ways as possible<sup>21</sup>.

One of the key messages from the recent SIDS meeting in Samoa two months ago (International Conference on Small Island Developing States, Samoa 1-4 September 2014), was delivered by the heads of three regional organizations, together with the Commonwealth, calling for the strengthening of a global partnership to support climate change planning and finance in small island developing states<sup>22</sup>. The Commonwealth, the Secretariat of the Pacific Regional Environment Programme (SPREP), the Caribbean Community Climate Change Centre (CCCCC) and the Indian Ocean Commission united in calling for new partners to scale up the partnership.

The SIDS Conference in 1994 recognised that small island states contributed little to green house gas emissions and other factors contributing to a changing climate, but in fact bore a disproportionate impact of those changes and this was unsustainable. Twenty years later, the situation has changed little and ramping up accessible climate finance to small islands has not achieved even a small percentage of what we know is required.

Considerable finance (including long term commitment to a sustained effort) is necessary to fund activities that respond to impacts such as flooding, cyclones, coastal erosion, droughts and increased variability of precipitation (ODI, 2013). It is clear to all climate practitioners that adaptation is good for business in almost any context, and what is deemed to be an 'adaptation' activity is sufficiently wide in scope to accommodate even the slightest impact on reducing

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<sup>20</sup> In the Maldives, ADB, EIB and the Islamic Development Bank have designated US\$110 million for the installation of solar-diesel hybrid grids on 160 islands. The initiative seeks to reduce the Maldives' dependence on expensive oil imports, which cost US\$470 million in 2012. Of the US\$110 million, US\$38 million grant will come from an ADB grant and another US\$12 million from the ADB-administered CIF Strategic Climate Fund. EIB and the Islamic Development Bank will provide US\$50 million and US\$10 million, respectively, in additional co-financing. [ADB Press Release 1 October 2014: *ADB Grant to Help Maldives Tap Solar Power, Cut High Fuel Bill*]

<sup>21</sup> ADB Clean Energy Bonds (2014), ADB Publication 16 October 2014.

<sup>22</sup> See more at: <http://thecommonwealth.org/media/press-release/call-scale-climate-partnership-small-islands#sthash.P9KS3bux.dpuf>

vulnerability or increasing resilience. It is also essential under all climate change scenarios described by the IPCC.

In 2013, one of the largest approved climate adaptation projects was the PPCR grant for ‘Coastal Embankment Improvement’ (USD\$ 25 million) in Bangladesh, aimed at improved resilience to climate change through infrastructure improvements. Around the same time, the ‘Economy- wide integration of Adaptation and Disaster Risk Reduction to Reduce Climate Vulnerability of Communities’ LDCF<sup>23</sup> grant in Samoa is an example of the increased targeting of disaster risk reduction activities by adaptation funds in recent years (Kellett and Caravani, 2013).

This project looks at the predicted effects of climate change on Samoa and seeks to address the expected losses to lives, livelihoods and assets for local communities in Samoa. The solution to this problem as seen by Samoa is to adopt an economy-wide approach to climate change adaptation in Samoa. This will allow for increased integration of climate change adaptation and disaster risk management into national development planning and programming across all sectors. In addition, the climate resilience of local communities – including their physical assets and livelihoods – must be strengthened. Barriers to climate change adaptation in Samoa include fragmentation of efforts; focus on “project-by-project” approaches rather than “programmatic” approaches, limited capacity, inherent vulnerabilities of communities and weak monitoring.

The project will contribute to overcoming these barriers by strengthening institutional capacity within the government, enhancing inter-ministerial coordination, promoting inclusion of climate change into development strategies across all sectors, climate-proofing of communities, more climate-resilient livelihoods options, and sharing lessons learned across the Pacific region. It is implemented by the Ministry of Natural Resources and the Environment together with the Ministry of Finance, Ministry of Women, Communities and Social Development, and the Land Transport Authority.

SOPAC (the Pacific Islands Applied Geoscience Commission, now a division of the Secretariat of the Pacific Community) developed what is now a well-respected set of indicators called the Environmental Vulnerability Index (EVI). It is a measurement tool used to provide insights into the processes that can negatively influence the sustainable development of countries, small islands in particular. The EVI index (ASMI, 2008) suggests that of the forty-seven small island states<sup>24</sup>, thirty-four of them are classified as either “extremely vulnerable” or “highly vulnerable.” In

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<sup>23</sup> Least Developed Countries Fund (LDCF) has approved over 160 projects since 2003. The LDCF (through the Global Environment Facility) finances the preparation and implementation of NAPAs in response to urgent and immediate adaptation needs in LDCs. [http://unfccc.int/cooperation\\_and\\_support/financial\\_mechanism/least\\_developed\\_country\\_fund/items/4723.php](http://unfccc.int/cooperation_and_support/financial_mechanism/least_developed_country_fund/items/4723.php), accessed 12 November 2014.

<sup>24</sup> As indicated on the opening page, there are now only thirty-nine fully-fledged small island States. The figure of forty-seven in 2008 includes additional islands now incorporated into other national jurisdictions.

comparison to other nations, SIDS accounts for approximately fifty percent of all countries worldwide classified as “extremely vulnerable”. This is an alarming percentage.

The knowledge base is clearly in place and there have been many meetings and discussions but not much direct actionable support to small-scale enterprise (this is a rather broad generalization but is very much the case in many circumstances). What still seems to be missing are the simple practical tools (meaning ways and means of gathering financial support) that would allow small businesses access to concessional financing, not unlike a micro-finance institution, only with lower interest rates.

### **Private sector to increase climate change support, so they say?**

While there has been much talk (according to the major donors<sup>25</sup>) in recent years about the necessity to increasingly rely on the private sector to support the massive and growing needs of climate change adaptation and mitigation, the question remains; why does the private sector need to ‘step up’ in accordance with the major donor suggestions? Despite many meetings, we still don't know from where the expected long-term finance, which is supposed to deliver USD\$ 100 billion by 2020, will actually come (ClimateFundsUpdate - *10 things to know about climate finance in 2013*).

According to the Climate Investment Funds, the private sector has a vested interest in engaging in climate initiatives.

*Many private entities face serious risks from climate impacts and must manage those risks. At the same time, private enterprises are uniquely positioned to contribute to climate action, such as in innovative technologies to reduce greenhouse gas emissions, innovative business models around sustainable supply chains, and climate-resilient infrastructure design<sup>26</sup>.*

Further to this, the CIF is of the opinion that climate action can also generate lucrative business opportunities, particularly in technologies that are attractive to private enterprise, as demand increases for renewable energy, efficient power plants, better public transport, high quality agricultural products, and climate-resilient infrastructure, among others. And this is a commonly shared opinion; in general, it makes quite reasonable assumptions. The difference is that it is not a “one-size-fits-all” scenario; small islands are different, and their private sector is different – representing a parallel set of challenges and vulnerabilities that their home countries exhibit. In a 2010 survey (UN Global Compact , 2011) eighty-three percent of nearly a hundred private

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<sup>25</sup> See in particular the Conference of the Parties past meetings (<http://unfccc.int/2860.php>). The twentieth session of the Conference of the Parties (COP 20) will take place from 1 to 12 December 2014 in Lima, Peru. <http://www.cop20.pe>.

<sup>26</sup> Private sector information from the CIF website at: <https://www.climateinvestmentfunds.org/cif/node/8598> accessed 12 November 2014.

companies interviewed believed climate change was a threat to their products or services; eighty-six percent believed that responding to climate change poses a business opportunity for their company. However, only a third claimed their approach had a strong emphasis on risk and/or responding to emerging activities. This supports the current rhetoric but adds little confidence to the need for practical action and massive cash investment.

Samoa also faced another common misconception regarding private sector support (locally and less so internationally), which is the old adage that private companies are 'for profit' so, why do they need support? This is a fair question. In the case of small island states the answer is somewhat simpler given the often-lacking large-scale private companies and the Government often being the biggest national employer. History has shown us that small incentives can result in significant positive change, under the right conditions (SPREP, 2011). Still however, there was some local opposition in Samoa due to this misconception – an almost ideological opposition to someone making a profit from environmental protection. These are the kinds of constraints felt by many small island States; a lack of understanding and a lack of vision.

The UK's Chief Scientist says it very clearly:

*“... ingenuity and innovation from the private sector will play a key role in coping with the huge changes the world will experience between now and 2050.*

*Where is the ingenuity? Where is the innovation? The answer, yes to some extent it is in the government labs but vastly more it is the private sector, working on the profit basis’<sup>27</sup>.*

## **What we have learned about the value and importance of private sector initiatives**

Another common misconception from Government standpoint is that Government itself is at the forefront of development, largely because of controlling interests including legislation, taxation and interpreting and applying the law. This is simply not the case. The private sector is out there on the leading edge while Government plays catch up to legislate, control, tax and generally monitor safety and equity. Entrepreneurs will freely describe Government blockades to innovation, and the projects in Samoa were no exception to this.

Firstly, small businesses are rather more accustomed to working with risk constantly at the door. It is precisely this ability to take risks that maintains private sector position at the leading edge of innovation. In Samoa, it was clear that these 'home grown' solutions were in fact better suited to the conditions and needs of the country. The ability to recognize the need, devise a workable solution and then seek out the technical expertise (often external) for an innovative energy project

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<sup>27</sup> See more at: <http://www.rtcc.org/uk-chief-scientist-private-sector-innovation-key-to-addressing-climate-change/#sthash.DECZbiwS.dpuf>



already exists. What we found lacking were two things: i) the necessary open-mindedness of Government to provide support to the development of such projects, and ii) the small financial incentives needed to get a pilot or test area up and running (these private sector companies were willing to take concessional loans to make their vision a reality). The reasons behind Government hesitancy are many and comprise of a combination of political motives, lack of technical understanding, being change averse and unwillingness to take the long view.

We can say with confidence that the private sector, in order to work effectively with government and communities, needs to develop and strengthen those networks to develop better understanding and communicate more clearly the strengths and weaknesses of a proposed innovation. An important message to Government in particular is that entrepreneurs create jobs; adaptation and mitigation are business opportunities, while climate change is also a challenge to the very sustainability of their businesses. Donors also need to understand the language and protocols of businesses in order to properly engage. Good communications means good business in almost any context, however there seems to be a significant gap between donors and the private sector despite considerable effort to address this disparity.

This situation can and should be taken up by the regional organizations that have the ability to communicate at all levels and to fill that gap. Similarly, it seems that Government organizations (Ministries and agencies) could benefit from learning to be supportive and open-minded about climate change initiatives to be better able to:

- provide the best available information about climate change to facilitate climate change adaptation actions by the private sector;
- making information accessible and useable;
- ensuring that regulations, markets and institutions promote effective private climate risk management;
- managing risks to public goods/assets and government service delivery;
- taking account of climate change risk in policy and planning; and
- helping build capacity and resilience, where required, particularly to assist vulnerable individuals, groups, regions and communities.

This is very well described in a publication from the Australian Department of the Environment; *Roles and responsibilities for climate change in Australia*<sup>28</sup>.

In short, the following (drawn from the collective experiences of the companies and stakeholders in Samoa) are some of the things we have learned about what kinds of incentives might be useful to support private sector innovation in the energy sector in small island states:

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<sup>28</sup> See <http://www.climatechange.gov.au/roles-and-responsibilities-climate-change-australia> accessed 24 November 2014.

- **direct public sector support** (financial and regulatory) is needed to boost private sector contributions in the long term;
- there is a key role for the public sector to play in **removing as many of the barriers** (regulatory, legislative, tax incentives, relaxation of necessary technology importation for example) for investment as possible;
- Governments need to understand better the realities that the private sector is faced with, and the constraints that need to be overcome for **successful private sector engagement** (in this case it was the unavailability of concessional loans – commercial loans are available but at interest rates around ten percent);
- **financial incentives** will not be effective unless complemented by the right regulatory and institutional frameworks;
- **reducing investment risks** needs to be a first-order priority, before applying more comprehensive public policy instruments such as subsidies or loan guarantees;
- **existing investment assessment tools** (feasibility, cost-benefit) should be used to make informed decisions and must be communicated in a clear argument or description that includes political, financial and social considerations;
- do not talk in **jargon**, it can be intimidating and can diffuse the clarity of the message;
- **policy stability and consistency** (across different government departments) are paramount criteria for potential investors to be confident of public sector advocacy and support for clean energy and recycling initiatives; and finally,
- governments need to have a complete understanding (and a strong knowledge base, relevant skills, ongoing training and education) of both the **technologies and the markets** beyond the project level, to enable them to play a supportive role in helping more projects to be implemented successfully.

### **PART THREE: Recommendations and lessons for small islands**

While this paper has been developed largely on experiences in the small island developing states of the Pacific with a focus on Samoa<sup>29</sup>, the vast majority of materials contained here is applicable to other island states around the world. SIDS clearly do show signs of significant similarities physically, environmentally, economically and even socially in the lower latitudes. Reference to small island states of the Pacific therefore implies application to many of the other SIDS around the world.

The following bulleted points and list of key lessons have been devised specifically to endeavor to assist other small island states to prepare better proposals and more comprehensive business plans to support private sector initiatives for innovative clean energy and recycling projects.

- There remain significant barriers to accessing necessary seed financing for small scale operations to get on their feet through concessional financing or other incentive based mechanisms;
- One opportunity might be to take a small slice off some of the big Technical Assistance projects that the multilateral development Banks (MDBs) support for example, to include say a two percent contribution to local private sector innovations (i.e. two percent taken from major TAs in the energy and infrastructure sector, for example). This would require significant commitment from the Banks that would result in a likely upsurge in private sector contributions to innovation and appropriate solutions to clean energy and recycling needs on the ground.
- Governments seem to have a long way to go to develop knowledge and skills to be able to effectively support private sector initiatives in this sector. A partnership between key stakeholders could address this with practical, regular and well planned awareness raising and knowledge building training, workshops, seminars and attention to schools' curricula.
- Direct budget allocations for climate financing should be explored; transparency, accountability and inclusiveness will be the measures of success of these kinds of financing mechanisms.
- The ability to prepare a sound project proposal, manage, monitor and report remains a critical capacity constraint for most PICs.
- The possibility exists to develop regional programmes to build capacity within private sector organizations in PICs for example by funding a climate change specialist/project developer in Chambers of Commerce or their equivalent.

## Lessons Learned

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<sup>29</sup> Samoa was selected as a case study to illustrate the lessons learned while highlighting the generous support from the Climate Support Facility under the Global Climate Change Alliance (GCCA) from the European Union.

The following are the six key lessons learned over the course of this work in Samoa and from achievement from elsewhere in the Pacific and other small islands developing States.

**Lesson #1: Small; Island Developing States are not all the same:** The International Community's understanding of SIDS is still incomplete, lacking in perspective as to what the realities are for SIDS, let alone the private sector in SIDS and follows a one-size-fits-all approach.

## **Lesson #2: Business planning for Clean Energy**

Although a business case was not developed specifically for the proposed projects in Samoa, there were a number of relevant lessons learned we can draw from this business side of the process, including for example:

- i. **Allow ample time for planning:**  
timing is critical, there are no quick fix solutions so thorough planning is a necessary baseline;
- ii. **Get help with business planning:**  
assistance is usually necessary for good business planning, at least get objective and informed opinions on your plans;
- iii. **Be prepared for slow Government response (at first):**  
public sector support is not automatic for what seems to obviously be a very good idea;
- iv. **You will need commitment from Government to raise financing:**  
this is critical to a successful financing operation;
- v. **Short Term goals are easy, the money is in long term achievable objectives:**  
while immediate needs are readily identifiable, it's the long term implications and opportunities for up scaling that need out of the box thinking and solid business planning;
- vi. **Communications – you need people to i) know your idea, and ii) to understand what it means for the community, exactly:**  
knowledge and understanding of the technologies (both decision-makers – Government, and the general public) needs to precede any substantial investment to garner trust, commitment and support for efforts to produce clean energy and to responsibly recycle useful refuse;
- vii. **Small scale support for small scale initiatives:**  
MDBs appear to be overwhelmingly supportive on paper, but the requirements (reality)



are very specific and are generally not aimed at (or do not easily accommodate) small scale investment operations<sup>30</sup>;

viii. **Clean energy and recycling are valuable, practical climate adaptation tools:**

it will continue to be important to ensure that it is well understood amongst Government, civil society and the private sector, that climate change adaptation takes many forms that have many results, short and long term. Adaptation can and should result in reducing vulnerability. Clean energy and recycling technologies can and do contribute significantly to stepping up adaptation actions worthy of sustained support<sup>31</sup>;

ix. **Partnerships #1.**

**Plan strategically (with thought and vision) with all partners involved:**

partnerships need to be comprehensively developed, there are multiple players in any investment of this type, a plan for partnership building (like a 'Road Map' as some like to term this strategic planning);

x. **Partnerships #2.**

**Be ready to wear many hats:**

similarly, the policy environment and the need to address, revise, develop and implement supportive policies is a necessary role investors, innovators and entrepreneurs must also tackle, contribute to and support;

xi. **Partnerships #3.**

**Consider strengthening your voice with key partners:**

there may be additional strength in numbers; by combining several small initiatives together (a sort of consortium) may be a way to show solidarity as well as to generate a comprehensive approach to the issues;

xii. **Partnerships #4.**

**Credibility can be built through good strategic partnerships:**

oversight and technical support from a respected organization (NGO, INGO, MDB, bilateral, Government Department etc.) will likely be a valuable attribute to sell early ideas prior to getting some successful implementation 'runs on the board'.

**Lesson#3: Risk avoidance and an effective business case:**

As suggested above, it has become clearly obvious that having either good knowledge or

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<sup>30</sup> It is common knowledge amongst practitioners and MDB staff that the "transaction costs" for a one million dollar project are not that different from the work required to set up and run a ten or fifteen million dollar project.

<sup>31</sup> Clearly, basic economic development opportunities are linked to climate adaptation. The big threats to Samoa from climate change may include unstable growing conditions, loss of near coastal low elevation aquifers, coastal and interior erosion, possible siltation damage to reefs, damage to infrastructure, possible disease and epidemic health control.

good access to assistance to help work out a solid business case for innovative clean energy and recycling projects, is a critical part of a successful project or investment. This is a risk-based approach in practice. The three main things to keep this on track are:

- i. **Hazards that can affect growth** - learning and knowing the value of being able to assign a cost to the impacts of hazards:

While at first it may not appear easy to quantify hazard impacts however the costs of a specific loss are simple to calculate (hazard impacts most often cause a loss, physical, economic or other). This is the first part of understanding risk and this will be a risk-based business case.

- ii. **Knowing vulnerabilities is the key to success** - understanding how climate change can potentially affect lives and livelihoods:

This is probably the most difficult of the three parts of the business case. This part focuses on vulnerability and is the second key component of understanding risk.

The change in climate will have physical impacts that can affect the ability of a family or community to generate income or to carry on normal cultural practices. A comprehensive view of climate change is required to understand the full extent of how the vulnerabilities of a community can be reduced and growth can be sustained.

- iii. **Use of all available tools for business planning** – treating climate resilience, climate change adaptation, clean energy and recycling as a business:

The business case has been found to be one of the most effective tools to develop an understanding of the potential impacts of climate change adaptation. Knowing for example, the cost of doing nothing when reasonably well researched, can be a very convincing and objective way to present climate change impacts in its most basic understandable language, financial and economic cost.

#### **Lesson#4: Working with the big donors and lenders:**

When approaching the bigger funding agencies such as the Banks, the larger NGOs and the philanthropic organizations; do not be put off by early disinterest. Keep digging until you have exhausted all opportunities to gather the intelligence you need. Chances are that it will take time for you to ascertain precisely who is the correct person to talk to. Do not be put off by the response that the information you need is “all available on the website”, despite how frustrating this can be (not all websites are equal).

The bigger donors and lenders will almost always be looking for comprehensive proposals that illustrate clear understanding of the country's ability to access and manage climate change resources against at least the following six spheres of influence:

1. funding sources
2. policies and plans
3. institutions
4. public financial management and expenditure
5. human capacity, and
6. development effectiveness<sup>32</sup>.

In a recent and valuable contribution to the climate change initiatives in the Region, ADB (2013) published the first thorough view of the economics of climate change in the Pacific. This booklet takes a risk-based approach as we do in this paper, and adopts a systematic methodology to generate findings that focus on policy alone. The Bank's own set of climate programmes are contained in one box on the final page of the document. The document misses that opportunity to link the work of the Bank to the findings of the economic analysis in order to provide the reader with some practical guidance on the meaning of these valuable findings.

In the Executive Summary of that report, the policy recommendations are in fact not that different than many of the lessons we have learned in Samoa. The authors of this paper agree fully with the ADB report's seven key findings; they just do not make that link to the situation on the ground, to the practical use and implications of these findings (e.g. the community needs and impacts, the human aspects). This is in part what we have attempted in this paper. The seven ADB summary policy recommendations (ADB 2013) are worth repeating here, as these policy recommendations are also a necessary part of a comprehensive approach to successful and sustainable climate change financing.

For example, the seven main recommendations are thorough and inclusive (paraphrased here for brevity; note especially Recommendation number six):

- 1) Mainstreaming climate change actions in development planning is crucial to minimize the impacts of climate change;
- 2) A forward-looking adaptation strategy is key to addressing the multitude of climate change impacts, with low-regret options and built-in flexibility as a basis for a robust adaptation pathway;
- 3) Adopting a risk-based approach to adaptation and disaster-risk management can help prioritize climate actions and increase the cost-efficiency of adaptation measures;

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<sup>32</sup> The Pacific Climate Change Finance Assessment Framework can provide some practical guidance in these matters. The Framework itself is however of limited practical use apart from the very interesting case study from Nauru, designed by the Pacific Islands Secretariat (AusAid 2013).

- 4) Climate proofing infrastructure can help improve long-term sustainability;
- 5) Improving knowledge and the capacity to deal with climate uncertainties is a key issue for the Pacific island countries;
- 6) Improved access to climate finance is critical for ensuring continued economic growth and development for the Pacific island countries;
- 7) Successful adaptation efforts require strong cooperation and coordination among multiple partners within and beyond the Pacific region.

## **Conclusion**

The most important conclusion is that the private sector in PICs is concerned with climate change and can be mobilized to develop proposals that would ameliorate some of the risks and contribute to resilience building and low carbon development. Solid, strategic partnerships and good business planning will likely be the cornerstone of successful small scale private enterprise.

Secondly, while the work done in Samoa was in many ways a rather frustrating exercise in that a lot of work by so many people seemed to achieve little, we have collectively gained valuable insights and experiences from this, evidenced by the practical lessons described in this paper. The fact remains that solutions must be found to facilitate the private sector in PICs to take up their needed role in climate change actions. The one-size-fits-all approach will not work.

Finally, development partners (Government, NGOs, development Banks and others) seeking to work with PICs must have both knowledge and understanding of the situations in PICs, and if this is lacking there are many regional organizations that can provide the necessary advice to realign projects and programmes to more realistic objectives and the better understand the needs and capacities of the private sector in each country.

As the risk of the do nothing (or do little) scenario becomes increasingly clear, adequate and effective climate change financing will be forthcoming; working together and not apart will streamline this inevitable development focus in small island States.

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## References

- Alliance of Small Island States (AOSIS) and The United Nations Foundation** (2008), *Global Climate Change and Small Island Developing States: Financing Adaptation - Green Paper Draft for Review*, 48pp.
- Asian Development Bank (ADB)**, (2013) *The Economics of Climate Change in the Pacific*, 85pp.
- AusAid** (2013), *Pacific Climate Change Financing Assessment Framework*, Final Report May 2013, 40pp.
- Buchner, B Falconer, A Hervé-Mignucci, M Trabacchi, and Brinkman, M** (2011) *The Landscape of Climate Finance*, a CPI Report, Climate Policy Initiative, Venice (Italy), p. 1 and 2.
- Climate Funds Update:** [www.climatefundsupdate.org](http://www.climatefundsupdate.org) (data accessed in November 2014) 2pp.  
<http://www.climatefundsupdate.org/about-climate-fund/10-things-to-know-about-climate-finance-in-2013>.
- Cunliffe, S** (2013), *Resource Text – Relevant documentation in support of the Concept Note Proposal to the Asian Development Bank*, July/August 2013, (unpublished documentation prepared for SPREP under technical assistance grant (Work Order #29) with the Climate Support Facility under the GCCA Intra-ACP Programme.
- Flynn, C.** (2011) *Blending Climate Finance Through National Climate Funds: A Guidebook for Design and Establishment of National Funds to Achieve Climate Change Priorities*, United Nations Development Program (UNDP).
- International Monetary Fund** (2014), *Regional Economic Outlook Update: Asia and Pacific*, October 10, 2014, 10pp.
- Kellett, J. and Caravani, A.** (2013) ‘*Financing Disaster Risk Reduction: A 20 year story of international aid*’. ODI and World Bank GFDRR. <http://www.odi.org.uk/sites/odi.org.uk/files/odi-assets/publications-opinion-files/8574.pdf> Montes
- Kerzner, H R.**, (2013) *Project Management: A Systems Approach to Planning, Scheduling, and Controlling*, , Chapter 23, page 10.
- Montes, M.** (2012) ‘Understanding the Long Term Finance Needs of Developing Countries’, South Centre, presentation to the 1st workshop on long term finance. <http://unfccc.int/files/cooperati>  
[on\\_support/financial\\_mechanism/long-term\\_finance/application/pdf/montes\\_9\\_july\\_2012.pdf](http://unfccc.int/files/cooperati)
- Overseas Development Institute** (2013) Caravani, Alice ; Barnard, Sam; Nakhooda, Smita; and Schalatek, Liane; *Climate Funds Update*, Climate Finance Fundamentals, Volume #3, 2pp.
- Pacific Islands Forum Secretariat (PIFS)** (2011) *Options Paper on Improving Access to and Management of Climate Change Resources*.
- Secretariat of the Pacific Regional Environment Programme (SPREP)** (2011) *Mobilising Climate Change Funding in the Pacific Islands Region*.
- SOPAC/GEF/IWRM/RSC.5/6:** (2013), Fifth Meeting of the Regional Project Steering Committee for the SOPAC/UNDP/UNEP/GEF Project: “Implementing Sustainable Water Resource and Wastewater Management in Pacific Island Countries”, STATUS OF IWRM POLICIES AND PLANS FOR INTEGRATED WATER RESOURCE MANAGEMENT.
- Woodruff, A and SOPAC** (2007) *An Economic Assessment of Renewable Energy Options for Rural Electrification in Pacific Island Countries*, SOPAC Technical Report 397.



**UN Global Compact** (2011) *Adaption for a Green Economy: companies, communities and climate change*, (UNEP, WRI and Oxfam), April 2011.

**UN Global Compact** (2012), UNEP, *Business and Climate Change Adaptation: Toward Resilient Companies and Communities* A Caring for Climate Report by the United Nations Global Compact and United Nations Environment Programme in cooperation with the CEO Water Mandate.

[https://www.unglobalcompact.org/docs/issues\\_doc/Environment/climate/Business\\_and\\_Climate\\_Change\\_Adaptation.pdf](https://www.unglobalcompact.org/docs/issues_doc/Environment/climate/Business_and_Climate_Change_Adaptation.pdf)

**USDA, Elbehri, A and Wainio, J** (2006), *Preferential Tariffs, WTO and Developing Countries: Do the Gains from Multilateral Market Access Outweigh Preferential Access?*, Contributed paper prepared for presentation at the International Association of Agricultural Economists Conference, Gold Coast Australia, August 12-18, 2006, USDA Economic Research Service, Washington, DC, USA.

## ***Additional Resources and information on Small Island Energy***

**[GENI Report on Renewable Energy Potential of Small Island States](#)** Dec 2008 - Alvaro Garcia - Global Energy Network Institute

### **[List of Small Island Developing States \(SIDS\)](#)**

**[Low-Carbon Development Strategies for the Caribbean](#)** Nov, 2013 - WorldWatch Institute - worldwatch.org  
Worldwatch's Sustainable Energy Roadmaps for Small-Island States of the Caribbean aim to develop and communicate low-carbon energy strategies that empower these countries to reduce their consumption of, and dependence on, fossil fuel imports.

**[NRG Energy completes first two solar energy projects with the Clinton Foundation in Haiti](#)** Mar 22, 2012 - Anne Zimmermann - pv-tech.org  
Former president Bill Clinton and NRG Energy's president David Crane visited Haiti to examine the progress of the solar power installations built in partnership with the Solar Electric Light Fund (SELF).

**[Electricity through solar energy for 6 islands](#)** Feb 2, 2012 - Ahmed Rishan - haveeru.com.mv  
Renewable Energy Maldives (REM) together with the State Electric Company Limited (STELCO) kick started a project yesterday, to generate electricity using solar energy in 6 islands in Male' atoll.

**[An Economic Assessment of Renewable Energy Options for Rural Electrification in Pacific Island Countries](#)** (pdf) Feb 2007 - Allison Woodruff - SOPAC Technical Report 397.

**[100% Renewable Energy Islands](#)** Apr 15, 2004 - Partnership for Sustainable Development  
The objective is to assist island states to meet 100% of their energy requirements from Renewable Energy Sources (RES) by helping them with the preparation & planning, organization and all the inputs (technical, financial & managerial) required for implementation of the 100% RES plan. By helping several SIDS to use 100% RES for their energy supply, this partnership will result in \* Island states stopping the use of fossil fuels and the environmental damage caused by these fuels. \* Meeting their energy needs from locally available renewable sources in a sustainable manner. \* Local manufacture of RE equipment creating employment & income generation leading to poverty reduction.

**[Renewable Energy on Small Islands](#)** (pdf) Aug 2000 - Thomas Lynge Jensen - The Forum for Energy and Development (FED)  
The first edition of Renewable Energy on Small Islands was published in April 1998 and was financed by the Danish Council for Sustainable Energy. 1 The background for the report was the decision by the Danish Government to establish an official Renewable Energy Island (REI) i.e. an island that will become 100% self-sufficient from renewable energy sources. In November 1997, Samoa was selected among 5 candidates to become the official Danish REI. The objective of the overview of renewable energy on small islands was to prepare for future global co-operation and networking among REI's.  
This second edition includes new cases and updated information on cases from the first edition. In relation to some of the cases from the first edition, it has not been possible to obtain updated Information. These cases are summarized in appendix 1 of this second edition. <http://www.cler.org/predac/IMG/pdf/doc-52.pdf>

**[Schneider Power Advances Two Caribbean Wind Projects](#)** Feb 1, 2010 - Energy Central  
In two separate developments, Schneider Power Caribbean Inc., a wholly owned subsidiary of Schneider Power Inc. (TSX VENTURE: SNE) today announced the achievement of important new milestones on respective wind projects in the Commonwealth of the Bahamas and the Dominican Republic.

**[Hawaii on track toward renewable power goal](#)** Jan 28, 2010 - Mark Niesse - The Associated Press  
Two years into Hawaii's ambitious project of vastly increasing the amount of power it gets from renewable sources, state leaders say the islands are on track.

**[Trinidad to develop renewable energy industry](#)** Apr 9, 2009 - The Associated Press  
Trinidad and Tobago, the Caribbean's top exporter of oil and natural gas, plans to finance a renewable energy industry that would help diversify its economy as falling oil prices slash public income, a top energy official said Thursday.

**[Wind farms speed up on Molokai and Lanai](#)** Mar 18, 2009 - Mark Niesse - The Associated Press  
Three energy companies announced plans Tuesday to team up and build wind farms on Hawaii's more rural islands to feed electricity to the urban core in Honolulu

**[Tiny Tuvalu says all its energy renewable by 2020](#)** Jul 19, 2009 - Michael Casey - The Associated Press



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Please address any general questions and messages about the GCCA and related activities to [info@gcca.eu](mailto:info@gcca.eu).