Case Study on the North Pacific ACP Renewable Energy and Energy Efficiency Project (North-REP)
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Prepared by Economic Development Division of the Secretariat of the Pacific Community
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<tr>
<td>ADB</td>
<td>Asian Development Bank</td>
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<td>Alliance of Small Island States</td>
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<td>North-REP</td>
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<td>PV</td>
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Background

The North Pacific ACP Renewable Energy and Energy Efficiency Project (North-REP), is a € 15.5 million energy assistance initiative for Federated States of Micronesia (FSM), Republic of Palau (Palau) and Republic of the Marshall Islands (RMI). The project began in May 2010 and the current phase will end in April 2015. It is financed by national allocations under the 10th European Development Fund (EDF10), and is implemented by the Secretariat of the Pacific Community’s (SPC) Economic Development Division (EDD) as a combined multi-country programme through a contribution agreement with the European Union (EU). The project employs four advisors: two (including the Team Leader) based in SPC’s North Pacific Regional Office in FSM and one each in RMI and Palau.

The overall objective is to improve the quality of life on the outer islands and to reduce dependence on fossil fuels. The Purpose is to improve the overall efficiency of the energy sector through energy efficiency and grid-connected renewable energy (RMI, FSM, Palau) and increase access of remote populations to reliable renewable electricity services (RMI, FSM). The project objectives and purpose were designed to address the context-specific energy needs of each country as issues of energy access and efficiency differed for each. This report will highlight some of the energy issues of each country and the subsequent interventions undertaken by North-REP.

Summary of North-REP expenditure (USD) 2010–2013

Palau and its energy situation

Palau, officially the Republic of Palau is an island country located in the western Pacific Ocean. It is geographically part of the larger island group of Micronesia. The country’s population of an estimated 21,000 is spread across 250 islands forming the western chain of the Caroline Islands. The most populous island is Koror with an estimated 13,000 people.

More than 99% of Palau’s population have access to grid-connected electricity, which is provided by the local utility company. Electricity generation in Palau predominantly uses diesel, despite a number of solar grid-connected systems. A GET/UNDP-funded initiative of the National Development Bank of Palau (NDBP) was trialled recently. About 15 home solar PV grid-connected systems for households were installed. These, together with the-grid connected systems at the Capitol building, airport, hospital and education office were not vigorously pursued, as there was no renewable energy framework for the utility that could determine the threshold of renewable energy penetration to the grid. Furthermore, an energy loan subsidy scheme was in existence for new home builders but this targeted only a small income bracket of the population. A request was made for support to expand the scheme to existing home-owners, considering renovations and restructuring of homes to be more energy efficient.

Results

1. National Development Bank of Palau (NDBP) energy efficiency retrofitting loans scheme

This initiative was targeted at improving energy efficiency and is one of the more successful models of sustainable energy efficiency for households in the Pacific. Home-owner renovation plans are vetted against an energy criteria checklist which determines the eligibility and value of subsidy (not exceeding USD 5000 per loan). Criteria include replacing galvanised roofing with white factory finished reflective roofing, installing a solar water heater unit, restructuring the roof to install ventilation slots, and replacing electric stoves with gas stoves. This scheme ensures long-term energy efficiency that is owner-driven and sustainable. By the end of 2013, 105 applications had been received and 25 retrofitting works had been completed. Twenty-two are currently under construction and another 48 homes are currently seen as prospective for construction in 2014. This should contribute significantly to the attainment of the North-REP goal of saving 35.9 kWh (10%) through energy efficiency retrofitting per household.

2. Palau Public Utility Corporation (PPUC) Support

Renewable energy framework: This was a USD 40,000 technical assistance initiative given to PPUC. It included an assessment of the Palau energy utility power system to determine the level of renewable energy that can be sustainably fed into the grid without destabilising the system. This was a vital component of work for PPUC as it also included the development of standards and guidelines for independent power producers (IPPs). The consultancy was successful in making an assessment of sustainable levels of renewable energy which could be fed into the utility, as well as determining standards for a renewable energy system provided by an IPP. Collaboration with IRENA and PPA also resulted in a technical workshop on modelling to determine the renewable energy penetration into the PPUC grid. The outputs were endorsed by the PPUC board and used in a PPUC request for proposals for an IPP to provide a 5MW system. Such an intervention is a sustainable measure for the ongoing supply of renewable energy to Palau and will ultimately reduce the country’s dependence on fossil fuels and increase national saving. In addition to these, North-REP will be installing a USD 300,000 150 kW solar PV grid-connected system that will be maintained and operated by PPUC.
3. Review and development of a Palau energy administration framework

The revised framework is anticipated to result in the drafting of an associated bill which should lead to the development of a national energy act. Such legislative mechanisms will clarify the role, resourcing and associated operations of the Palau Energy Office (PEO) in supporting national energy initiatives, policies and regulations concerning energy generation and sustainability through renewable energy and energy efficiency initiatives. It is anticipated that this will also help with improved coordination of the energy sector between the government, PPUC, the NDBP and other key stakeholders, including the National Energy Committee. This North-REP initiative should ensure sustainable long-term policy support, national ownership and resourcing of future renewable energy and energy efficiency initiatives in Palau.

4. Renewable energy course at Palau Community College (PCC)

North-REP has developed a course on the maintenance and operations of a solar PV grid-connected system that includes course modules and a 1.7 kW grid-connected PV system for its practical component. The course has been integrated into the PCC electrical engineering curriculum and is currently undergoing an accreditation process. Materials to pilot the course are being purchased with the intention to have the course offered to students in the next semester. North-REP will also sponsor a few students to take this course. The integration of such training programmes to national training institutions provides a sustained means of building capacity as opposed to ad hoc training programmes conducted only when funding is available.

Federated State of Micronesia and its energy situation

Federated States of Micronesia (FSM) is an independent sovereign island nation consisting of four states – from west to east: Yap, Chuuk, Pohnpei and Kosrae – that are spread across the Western Pacific Ocean. Together, the states comprise around 607 islands. While FSM’s total land area is quite small (approximately 702 km² or 271 sq miles), it occupies more than 2,600,000 km² (1,000,000 sq miles) of the Pacific Ocean. The distances and scattering of the population across this vast distance poses significant challenges in the delivery of basic services, including electricity. The capital of FSM is Palikir, located on Pohnpei Island.

Each of the four island states operates with its own power utility and state system for infrastructure, health, education et al. As a result, they each have different energy needs and issues that are defined by the context, culture and legal frameworks. An outline of the context and initiatives addressed in each state are described below.

Yap State

Yap consists of numerous islands and atolls with an estimated population of 16,436 people. North-REP focused on the islands of Fais, Wolea and Satwal, as well as Mogmog and Fallalop in Ulithi Atoll. Out of the five atoll/ island groups, only three atolls had some intermittent electricity supply through a local diesel generator while two had no access at all. In 2009, the cost of electricity from diesel was calculated on a pro rata rate which averaged from USD 0.32 for households and businesses up to USD 0.74 for government. This is a comparatively high tariff by Pacific Island and global standards. The aim of the project in Yap was, therefore, to provide basic access to energy for the 1900 people living in areas with no access and, in the long term, help reduce the reliance on diesel-generated electricity.

Results

1. Installation of ten solar PV micro-grids

North-REP has ten solar micro-grids in the outer islands of Yap. The completion will see to a total of 233 kWp micro-grid systems that will provide 24-hour access to electricity for four schools, two health facilities and a population of 1,900.

In the past, people have paid large amounts of money for very low-quality, inconvenient, and oftentimes unsafe energy services such as candles or kerosene lanterns. In terms of quality of life, these solar grids are cleaner and safer energy sources, which will allow people to use the money saved for their livelihoods. Access to 24-hour power is expected to lead to other potential benefits, such as improved education results through allowing students to study after sunset, improved health services by powering health equipment and access to communication through landlines and mobile phones.

Chuuk State

Chuuk is the most populous state in FSM with an estimated total population of 48,654 people. It also has the biggest need for access to basic electricity, given that 54% of the population, mainly in the outer islands, do not have any access. Additionally, only recently did the main island of Weno have consistent 24-hour power. Chuuk also has issues with securing land for public facilities, particularly for electricity generation. This caused challenges for North-REP in introducing technology to improve access to electricity.

Results

2. Installation of eight solar photovoltaic (PV) stand-alone systems

Due to the land issues in Chuuk (noted above) the North-REP prioritised providing energy to schools and health centres that have secured land leases with the state government. The project installed eight solar PV stand-alone systems (63 kWp) to support the provision of electricity to ten schools and three health centres that have secured land leases with the state government. The project installed eight solar PV stand-alone systems (63 kWp) to support the provision of electricity to ten schools and three health centres that have secured land leases with the state government. The project installed eight solar PV stand-alone systems (63 kWp) to support the provision of electricity to ten schools and three health centres that have secured land leases with the state government. The project installed eight solar PV stand-alone systems (63 kWp) to support the provision of electricity to ten schools and three health centres that have secured land leases with the state government. The project installed eight solar PV stand-alone systems (63 kWp) to support the provision of electricity to ten schools and three health centres that have secured land leases with the state government. The project installed eight solar PV stand-alone systems (63 kWp) to support the provision of electricity to ten schools and three health centres that have secured land leases with the state government. The project installed eight solar PV stand-alone systems (63 kWp) to support the provision of electricity to ten schools and three health centres that have secured land leases with the state government. The project installed eight solar PV stand-alone systems (63 kWp) to support the provision of electricity to ten schools and three health centres that have secured land leases with the state government. The project installed eight solar PV stand-alone systems (63 kWp) to support the provision of electricity to ten schools and three health centres that have secured land leases with the state government. The project installed eight solar PV stand-alone systems (63 kWp) to support the provision of electricity to ten schools and three health centres that have secured land leases with the state government. The project installed eight solar PV stand-alone systems (63 kWp) to support the provision of electricity to ten schools and three health centres that have secured land leases with the state government. The project installed eight solar PV stand-alone systems (63 kWp) to support the provision of electricity to ten schools and three health centres that have secured land leases with the state government.
Results

5. Basic access to electricity for 250 households

Through North-REP, 50 household solar systems were purchased and a gradual installation is being undertaken. When completed (in 2014), Kosrae will have increased its provision of basic access to electricity from 98% to an estimated 99.5% of the total population. The provision of electricity to households previously without power will contribute to improved livelihoods through increased economic activity and improved education, health, communications and security.

6. Installation of a 4 kW school system

This will be installed at the Walung school and will provide electricity for around 100 students. Previously this school had its only electricity access from the nearby church diesel generator. The provision of this solar system has allowed the school to purchase and install a few computers, a printer and fans. The outcome of this has been to support the school in connectivity, communications and the printing of exam papers and syllabuses. The fans have also assisted in keeping the learning environment comfortable for students during the hot weather and in cooling the school’s electronic equipment.

7. Installation of 300 user pre-pay meters

North-REP sought to assist the local utility with maintenance and sustainability of its energy systems. The local utility had identified the need for improved fee collection and payment systems by local households. North-REP supported the purchase and installation of 300 pre-pay meters. These systems have ensured that payments are made in advance of the supply of energy to local households. An expected outcome of this increased collection of fees by the local utility will be ongoing maintenance of the North-REP supplied systems, thereby increasing the sustainability of the project.

National government support

As noted above, FSM has a political system that is similar to that of USA in terms of self-governing states. In recognition of this context, the North-REP project developed its programmes and resource allocations according to the varying energy situations and needs of the states. Similarly, it also sought to engage and support the national government through the Department of Resources and Development around its energy programme. A number of different initiatives were identified and supported, specifically around energy capacity building and improving the coordination of national energy efforts, as well as initiatives with international agencies.

Kosrae State has an estimated population of around 12,000 people. Prior to North-REP, 98% of the population of Kosrae already had access to grid-connected electricity. No power existed around 50 households (250 people) still had no access to electricity. As in the other states, Kosrae power generation is heavily reliant on diesel.

Pohnpei State

Pohnpei is one of the four states in the Federated States of Micronesia (FSM). Palikir, FSM’s capital, is located on Pohnpei Island, the largest, highest and most developed single island in FSM with a population of 34,000 people. In terms of access to electricity, Pohnpei State has a single main power grid with a diesel generator installed capacity of 7.6 MW of electricity (peak load 6.9 MW). Approximately 96% of the population of Pohnpei State live on the main island. Access to electricity on the main island is estimated to be over 95%, while access rates in the outer islands are lower and serviced mainly by mini-diesel grids and household solar systems. The system on the main island of Pohnpei is 100% dependent on imported diesel for power generation. Power is supplied by Pohnpei Utilities Corporation (PUC), which is a 100% state-owned corporatised utility. The main aim of the North-REP project in Pohnpei has been to improve the quality of access and increase the percentage of renewable energy supplied by the local utility.

Results

4. Revitalisation of the hydro power plant

The Nanpil Hydropower Plant (2.08 MW) was constructed in the 1990s but is currently non-operational. The national FSM Department of Resources and Development, the Pohnpei Utilities Corporation and the Governor’s Office agreed to have North-REP repair and operationalise the existing Nanpil Hydropower plant. An expert was brought in from the Pacific Power Association (PPA) to do an assessment of the hydropower plant. After an international tender process, USD 1.5 million was allocated by North-REP to rehabilitate the system. North-REP has also played a key role in assisting the PUC to provide training and technical assistance in many facets of power utility management and operation. It is anticipated that the hydropower plant will be commissioned by June 2014.

3. Provision of 3000 solar lanterns to school children

The North-REP initiated an innovative component to address challenges to accessing basic electricity due to land ownership issues by providing 3000 rechargeable solar lanterns to school students. These lanterns were purchased and set up at associated charging stations in the ten schools with solar PV systems. The lanterns were charged at school during the day and taken home by school children in the evening. Selected for their durability, the lanterns can provide up to 30 hours of light on a one-day charge, and also have a small dock to connect and charge mobile phones. Once the lanterns are taken home, it is estimated that up to 7,000 people could benefit from basic lighting.

The emerging impacts of the solar systems and lantern initiative in Chuuk include increased school enrolment, e.g. in West Fefan Elementary School, enrolment increased from 100 to 192 students. In addition, students are able to study at night, which should improve student performance. The lanterns have also enabled families to undertake productive economic activities, such as making handicrafts and fishing at night.

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North-REP was able to support a number of workshops nationally which brought together all state energy and utility personnel. These workshops focused on utility management training, tariff structuring and energy efficiency. Personnel were selected, based on national recommendation, and supported to attend internal workshops on energy. Some support was also given to the Department of Resources and Development to assist with proposals to access SIDS-DOCK funding. SIDS DOCK is an initiative among member countries of the Alliance of Small Island States (AOGIS) to provide the Small Island Developing States (SIDS) with a collective institutional mechanism to assist them transform their national energy sectors into a catalyst for sustainable economic development and help generate financial resources to address adaptation to climate change.

This is a planned initiative for 2014 which will look to retrofit the Pohnpei state building with energy efficient lights and selected energy monitoring systems for better management of the building cooling systems. The Pohnpei state building in 2011 ran up an average monthly electricity bill of USD 10,000. Considering the rise in electricity tariffs from USD 0.47/kWh in 2011 to USD 0.56/kWh in 2014, current estimates are that the building consumes electricity at a monthly cost of close to USD 13,000. An energy inspection carried out by SPC in 2011 identified that cooling and lighting costs alone accounted for 54% and 27% respectively of the total consumption. Targeted energy conservation and energy efficiency retrofits in these two areas could contribute to substantial savings for the capital building. It is estimated that a conservative savings target of 15% decrease in electricity consumption is possible; the building’s annual energy consumption would be reduced to 41,465 kWhs, with an annual savings of USD 23,220 per year.

Republic of the Marshall Islands and its energy situation

Republic of the Marshall Islands (RMI) is an island country located in the northern Pacific Ocean. Geographically, the country is part of the larger island group of Micronesia, with a population of 68,480 people spread out over 24 low-lying coral atolls, comprising 1,156 individual islands and islets. The most populous atoll is Majuro, which also acts as the capital. Before commencement of North-REP, 13.5% of the population (9,230 people), the majority of whom resided in rural atolls, had no access to electricity. The main provider of electricity in RMI is the Marshall Islands Energy Company (MIEC) that supplies electricity from diesel-run generators in Majuro, Jaluit and Wotje under a government contract. There is an issue of non-payment of electricity bills in RMI. In 2008, the RMI government declared a state of economic emergency in energy when it faced a shortfall of USD 8.5 million to cover the cost of fuel to supply electricity to the country.

Results

8. National training workshops and capacity building

Results

9. Improving energy efficiency for the national government buildings

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Results

1. Provision of 1500 solar PV systems to households

One of the key initiatives identified by the RMI national energy office was the need to address access to basic electricity for the remote populations on the island atolls. Based on the government’s selection criteria, the project was able to purchase and install 1500 solar systems. Importantly, the communities were consulted and agreed to a USD 100 installation fee and a monthly fee of USD 5. The communities were instrumental in determining a locally appropriate, innovative payment mechanism for the local electricity utility, involving the sale of handicrafts and agricultural products by selected third parties. These are significant steps in ensuring national ownership and, together with government involvement, will ultimately enable sustainability. To date, 1000 (66%) of all households have made payments for current usage as well as existing debts.

As a result of the provision of solar systems, a number of significant outcomes have begun to emerge. These include income-generation activities that can be undertaken at night, which has helped with economic well-being. Apart from providing light, the solar systems also have allowed for charging of mobile phones, which has enabled communications with markets, families, health and other services on the mainland, thereby improving living standards.

2. Technical support and advice for national energy planning

Following the energy crisis in 2008, RMI undertook a number of energy sector reforms. North-REP has been actively involved in these major energy planning initiatives. They include national energy consultations and the subsequent review of MEC and its operations. North-REP provided technical advice and sponsored programmes to build national capacity in energy planning and operations. It was consulted as a key stakeholder by other development partners active in the RMI energy sector. Furthermore, North-REP played an instrumental role in advising the Asian Development Bank in its assistance programme for reforming MEC and its change initiatives, with support from SPC. This work culminated in the 2014 review and revision of the national energy policy and its accompanying action plan, which has contributed to reducing energy consumption, as well as addressing fiscal challenges which emerged after the 2008 energy crisis.

Lessons learnt

Many PICTs are grappling with the issue of providing safe, secure and affordable energy to citizens as consistent with national energy policies and energy action plans. North-REP has made great strides in this area and, in so doing, offers lessons to development partners and projects that support PICTs in addressing their energy needs. Below is a summary of some of these key lessons learnt when North-REP addressed issues of effectiveness, relevance, efficiency and sustainability.

National ownership, involvement and collaboration during project design, planning and implementation is critical: The project complemented and was consistent with the national energy policies of the participating countries. It was built on past lessons learned and designed with inputs from major stakeholders so that the technological solutions introduced were appropriate for the particular circumstances of each country. Communities were consulted and informed about key decisions related to project implementation, land tenure and maintenance. By learning from its EU predecessor project (REP 5), North-REP was able to involve utility companies and secure buy-in, support and active participation in the project implementation. This has contributed greatly to the results so far. In similar projects, development partners should identify important stakeholders and seek to maximise their comparative strengths during design and implementation.

National capacity and skills are key components that need to be addressed when providing new technologies and infrastructure: Utility companies were involved in the project from the onset and were responsible for technical installations. Technical training and capacity building programmes were held for staff at utilities, and technical counterparts were engaged as part of the project, which
included installing and maintenance of PV systems. Specific training was conducted for management staff in areas such as tariffs, demand forecasting, financial planning and fuel adjustment mechanisms. A course on renewable energy has been introduced at the Palau Community College, including the incorporation of the above mentioned courses into existing vocational electrical courses.

Designing innovative mechanisms to support resourcing of maintenance must be considered: Innovative funding arrangements are being put in place to meet future operations and maintenance costs, which is an issue that has been highlighted in many international projects as a major factor, which, if not addressed, may undermine sustainability. Proposed arrangements to partially meet these costs include the special fund for RMI, letters of agreement between utilities, installation of pre-pay meters in the outer islands of Yap, and the Chuuk Ministry of Education. This is a positive development and, along with householders’ willingness to pay, should limit subsidy requirements. It would be prudent for PICTs to consider innovative, locally appropriate ways to contribute to future project costs; not only would this enhance the effectiveness of initial investment, it should also increase the sense of pride among the direct beneficiaries.

The importance of flexibility of design in meeting contextual needs: While there was a project log frame with clear targets and assumptions, the project design was flexible enough to tailor its approach, resources and services not only to the three focal countries covered, but also to the four states of FSM. This has been critical to successful results so far. PICTs can adopt similar design flexibility consistent with achieving project targets, and project managers can be held accountable.

Addressing the three Cs – Communication, Coordination and Cooperation and Communication: In addition to SPC, many development partners, such as the Asian Development Bank, the Pacific Power Association, the United Nations Development Programme, the governments of Japan, Austria and Italy, have had active projects in the energy sector of FSM, RMI and Palau. Coordination and reporting amongst such a myriad of partners could overwhelm local capacity. Through SPC, efforts were made to ensure complementary and consistent actions through collaboration and memorandums of understanding. This is a very important success criterion for PICTs and development partners to consider in order to avoid duplication of efforts, incompatibility amongst technological solutions and future maintenance challenges, which, together, are not cost-effective and would exacerbate resources constraints in PICTs.

The North-REP brand and its importance for project implementation: Visibility, communication, awareness and perception are critical elements of any external project that seeks to cooperate with national entities to further maintenance through acceptance of payment regimes. These are critical to project results. It is imperative to include beneficiary communities in the planning of energy projects to ensure that these sources of local knowledge, influence and facilitation are considered. The success or failure of a project to meet its development objectives could depend on this.

Ensuring community involvement and building social accountability: In all the participating countries, community assistance in discussing and addressing land tenure issues, involvement during construction, and national entities to further maintenance through acceptance of payment regimes were critical to project results. It is imperative to include beneficiary communities in the planning of energy projects to ensure that these sources of local knowledge, influence and facilitation are considered. The success or failure of a project to meet its development objectives could depend on this.

Challenge: As a challenge, an area that needs to be considered for the remaining lifespan of North-REP is that of social accountability and its role in ensuring project sustainability or even scaling up on the good work that has been done by the project. The design of the project anticipated having to deal with risks posed by challenges in areas such as land tenure, payment regimes, agreements with government on details, meeting future costs, and staff recruitment and procurement delays. The project mitigated these risks by learning from previous projects in the participating countries and from SPC’s experiences with similar projects in the Pacific. North-REP deliberately addressed these issues very early on. In fact, some delays were experienced at the beginning of the project while land issues were being resolved and due to protracted engagement with governments to secure agreement to establish revolving funds. Another deliberate strategy was to seek the support and buy-in of communities and also to select durable technologies, given the harsh environmental conditions. The project is, therefore, on track to be completed without delays and with a high level of national ownership and confidence in its future sustainability.

Going forward: While much effort has been put into ensuring the sustainability of North-REP, it would be advisable to consider how social accountability may enhance this to continue and scale up the existing efforts. As with all governance systems, you need to consider the ‘top down’ supply of services and ‘bottom up’ demand. Engaging communities and civil society and working alongside them is a good way to address ‘demand’ by ensuring that they hold government to account for the provision of energy in the long term. In all developing countries, one has to recognise that budgets are limited and decisions are made around allocations for health, education, the military, public service spending, etc. However, social accountability seeks to ensure that the right decisions are always made to prioritise fundamental needs, such as the basic right of access to energy.

Conclusion

North-REP and SPC have been effective in managing EU funding under EDF10 to address specific national energy challenges in RMI, FSM and Palau. The flexible project design has allowed governments and communities to apply locally appropriate, innovative solutions to towards achieving the ambitious project results in the areas of capacity building, improving energy efficiency and expanding energy access. For the first time, households (4,500), schools (11) and health (4) facilities in remote areas can expect to have access to modern, cost-effective, safe and secure non-polluting basic electricity; while in Palau an innovative home loan programme has enabled close to 80 homes and small businesses to undertake retro-fitting to improve energy efficiency.

North-REP is already having positive developmental outcomes at both the macro and micro levels. Schools in rural areas are now able to use modern teaching such tools such as computers and printers, while students can study for extended hours at night. This should contribute to improved education performance in the long run. Refrigeration at dispensaries is improving health services. As a result of having lighting, household incomes stand to increase as productive handicraft making and fishing can now also be done at night. Because of an overall increase in energy conservation and efficiency, it is estimated that imports of diesel will decline by over 300,000 gallons per year, saving the countries over USD 1.5 million.

The results can be attributed mainly to working in close consultation with local governments and communities, as well as building local capacity and undertaking education and awareness programmes to build widespread interest in energy conservation and energy efficiency. Furthermore, with the use of pre-metering, innovative tariff regimes and the establishment of segregated revolving funds to meet future operations and maintenance, the project should become sustainable. Through timely consultations with stakeholders, the project was able to mitigate risks posed by challenges in the areas of land ownership, developing project agreements and procurement without significantly delaying implementation.

North-REP has worked innovatively and introduced mature technologies to RMI, FSM and Palau. It aligned its work with national energy policies and action plans in the beneficiary countries and contributed to addressing their important development priorities. Careful attention was paid to promoting local ownership and sustainability. Many PICTs are grappling with similar challenge as those in FSM, RMI and Palau before North-REP; they can learn from the North-REP experience and consider replicating the initiatives (subject to context) in their countries.
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