

**Research and Analysis on
Climate Change and Disaster Risk Reduction**

Working Paper 3

Strategic Opportunities for Resilient Development

Final

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Executive Summary

This report, commissioned by New Zealand's Ministry of Foreign Affairs and Trade, provides the rationale for, and details of strategic opportunities for the Ministry to invest in resilient development, climate change adaptation and disaster risk management as part of New Zealand's development assistance to the Pacific islands region. These opportunities have the greatest potential to add value through the Ministry's targeted and mainstream programming.

The findings bring together the results of two contextual reviews. The first was a review of the existing and emerging needs of Pacific island countries and territories with respect to climate change adaptation and disaster risk reduction, in a development context. The second was a review of the ways in which the Pacific island countries and territories, and their development partners, are addressing these needs. The analysis of the joint findings was undertaken for the Pacific region generally.

The strategic opportunities identified in this report reflect the identified needs and gaps. They also take into account the Ministry's comparative advantages in terms of strengthening national development planning and processes more generally, as well as in providing more targeted support to priority sectors. Identification of the opportunities also takes into account instances where multiple development partners are already active in addressing needs and gaps. While these area of focussed activity may be important in themselves, they will not normally represent value-added opportunities for MFAT engagement.

The findings include specific suggestions as to how the Ministry might promote a development-first approach to resilience and risk governance, in both its own internal procedures and in the support it provides to countries in the region, including Kiribati and Tuvalu specifically.

Leading by example, the Ministry must first examine its own internal policies and procedures to ensure that climate change and disaster risks, and the underlying causes of these risks, are considered explicitly and in an integral way. Gender-differentiated vulnerabilities, social exclusion, poverty and disabilities are example of factors that exacerbate climate and disaster risks. These risks should be considered throughout the policy and project cycles, from the initial conception and design phase through to monitoring, evaluation, reporting and learning.

Within the region there are six key opportunities of direct relevance to the Ministry.

- **Further invest in strengthening local government and community leadership and governance** – this opportunity is perhaps best represented by building on the innovative and successful work of the Pacific Risk and Resilience Programme. It is rolling out the “development first” approach by enhancing leadership and relevant governance mechanisms in cooperation with governments and communities in Fiji, Solomon Islands, Tonga and Vanuatu. The Ministry could partner with the European Union (EU) and Live and Learn Environmental Education to apply the learning in the existing Programme. Live and Learn already has a presence in Kiribati, so it would be logical to invest in increasing the resilience of development outcomes in selected outer islands of Kiribati by strengthening both leadership and governance.

- **Demonstrate how the Ministry’s existing support contributes to resilient development outcomes** – this opportunity reflects the fact that many aspects of the Ministry’s existing support to countries are highly relevant for resilient development. But these benefits are seldom recognised. For example, the Ministry’s support for public financial management reforms, such as the existing trial of budget support to the Kiribati government, represents an important entry point for also strengthening readiness capacity to access finance for progressing the resilient development agenda. Such efforts also provide the opportunity to increase the use of existing good practices. The Framework for Resilient Development in the Pacific, recently approved by Pacific, identifies several good practices that need to become “standard practice” if development outcomes are to be more resilient to climate, disaster and other risks. For example, national and regional education and training curricula and programmes should be strengthened by including both conceptual and practical learning to use good practice approaches and tools. In the shorter term, support should be provided so that individuals with the relevant knowledge and skills can be seconded to work in relevant parts of government, at both national and sub-national levels.
- **Invest substantially in national capacity in aid coordination, and in supporting information and knowledge management systems** – an opportunity exists to boost coordination capacity in Tuvalu and Kiribati by supporting the placement of additional qualified individuals within relevant agencies, including the Office of the Prime Minister of Tuvalu and Office of the President of Kiribati. Both nationally and regionally, support for improved information and knowledge management systems would significantly reduce the time local officials spend retrieving information for consultants working on development projects. New Zealand assistance has a comparative advantage in this regard.
- **Invest substantially in regional coordination capacity, and give priority to collaborative approaches** - collectively, regional coordination and collaboration delivers many benefits, including identification of clear pathways to delivering tangible results, economies of scale, involvement of regional organisations and other development partners where they have comparative advantage, and leveraging funding. The Pacific Resilience Partnership has been established to support implementation of the Framework for Resilient Development in the Pacific. New Zealand should use its significant convening power and leadership to build on the experience of the Pacific Leadership Programme, the Pacific Region Infrastructure Facility, the renewable energy road map process, the Regional Steering Committee for the Pacific and similar mechanisms, to explore the benefits of supporting a Pacific Resilient Development Facility, or similar, to provide technical and wider support to Partnership members.
- **Given the importance of addressing the underlying determinants of vulnerability, strengthen the links between building resilience and addressing food, water, energy, gender and human rights needs** – relevant actions are described in the Framework for Resilient Development in the Pacific and achieve the Sustainable Development Goals. Such mechanisms recognise the interconnectedness of all facets of development. Creating opportunities for learning and reflection between and across areas of development practice is a vital part of achieving development outcomes that are more resilient. This will require changes in the way programmes are designed and implemented, to ensure a broader range of stakeholders are consulted and can contribute their experience and expertise. The capacity of national and local government planners and existing coordination

structures to drive this process could be strengthened through dedicated support for monitoring, evaluation and learning positions.

- **Climate and disaster risks – manage for today as well as for the inevitable** - as well as managing the immediately foreseeable risks to development gains, more strategic thinking and approaches are required to address the challenges atolls and low-lying areas of higher islands will face in the coming decades as a consequence of sea-level rise, ocean acidification, coral bleaching and other changes driven by increasing concentrations of greenhouse gases. This requires greater understanding of the processes and implications of changes in atoll and island habitability as a result of the interplay between atmospheric, oceanic, social and economic conditions over the longer term. Such longer-term perspectives are critical when considering strategic responses, including international migration as an adaptation option for countries facing severe loss of habitability.

Other important opportunities were also identified. These include: (i) continue and expand support for national technical and vocational education and training institutions; (ii) scale up investment in The University of the South Pacific to boost its ability to play a key role in educating the next generation of Pacific leaders, including through the post-graduate certificate and diploma in climate change and disaster risk reduction; (iii) invest in the design and roll out of a regional volunteer scheme; (iv) further invest in local civil society organisations to support implementation of resilient development initiatives; (v) build the capacity of local consultants through a mentoring programme; (vi) invest in increasing the resilience of small and medium private sector enterprises; and (vii) reduce the number of regional training and other workshops.

The research has also highlighted where the Ministry should also consider strategic opportunities related to renewable energy, water security and resilience, health and disease control and oceans and fisheries.

Abbreviations

CCA	Climate change adaptation
CROP	Council of Regional Organisations in the Pacific
CSO	Civil society organisation
DFAT	Department of Foreign Affairs and Trade
DRR	Disaster risk reduction
EU	European Union
FBO	Faith based organisation
FRDP	Framework for Resilient Development in the Pacific
IDG	International Development Group
LCOE	Levelised cost of electricity
LEEE	Live and Learn Environmental Education
MFAT	Ministry of Foreign Affairs and Trade
NGO	Non-governmental organisation
PacTVET	Pacific Technical and Vocational Education and Training in Sustainable Energy and Climate Change Adaptation (project)
PICT	Pacific island countries and territories
PRIF	Pacific Region Infrastructure Facility
PRP	Pacific Resilience Partnership
PRRP	Pacific Risk Resilience Programme
PV	Photovoltaic
RSE	Recognised Seasonal Employer
SDG	Sustainable Development Goal
SPC	Pacific Community
TVET	Technical and Vocational Education and Training
UNICEF	United Nations Children's Fund
USP	University of the South Pacific
WASH	Water, sanitation and hygiene

1. Background and Introduction

Research on the implications of climate change and disaster risk to development is a strategic research priority for the Pacific and Development Group (PDG) of New Zealand's Ministry of Foreign Affairs and Trade (MFAT). To address this priority PDG commissioned the research reported here. The objectives were to (MFAT, 2016):

1. undertake a contextual review of the existing and emerging needs of Pacific island countries and territories (PICTs) with respect to climate change adaptation (CCA) and disaster risk reduction (DRR), in a development context;
2. undertake a contextual review of the ways in which the PICTs, and their development partners, are addressing these needs;
3. undertake a strategic review that identifies strategic areas and policy options for MFAT's development programming that are likely to produce the best value-add or benefit; and
4. identify specific, practical CCA and DRR responses through MFAT's targeted support and mainstream programming, with a focus on Kiribati and Tuvalu.

This report presents the findings of research related to Objective 3, above. It identifies strategic opportunities of greatest potential for MFAT to add value through its targeted and mainstream programming. The research has a Pacific focus, but builds on MFAT's global experience and expertise.

2. Methodology

The findings presented here combine the results of the two contextual reviews that addressed Objectives 1 and 2, above. The first review (Working Paper 1: Manley et al., 2016a) used literature reviews and stakeholder interviews to identify existing and emerging needs of PICTs with respect to CCA and DRR, in a development context. Key strategic investment themes for enhancing climate change and disaster resilient development in the Pacific islands region were also identified. These confirm and align to priorities set out in the Sendai Framework for Disaster Risk Reduction, the Paris Agreement and the recently adopted Framework for Resilient Development in the Pacific (FRDP).

The second review (Working Paper 2: Manley et al., 2016b) also used literature reviews and stakeholder interviews to identify current donor and development programme responses to the needs and priorities identified in Working Paper 1. The analysis was undertaken for the Pacific region generally, and for Kiribati and Tuvalu specifically.

When taken together, the preceding findings highlighted strategic opportunities with considerable potential for MFAT to add value through both its targeted and mainstream programming. Once again, the analysis was undertaken for the Pacific region generally, as well as for Kiribati and Tuvalu specifically. The results include specific ways to promote a development-first approach to resilience and risk governance within MFAT's own internal procedures and in its support to countries.

3. Findings - Strategic Opportunities

3.1 MFAT Walking the Talk: Moving to a Development-first Approach

The recent adoption of the FRDP by Pacific Leaders, including the Prime Minister of New Zealand, signals a general commitment to address climate and disaster risks as part of all development processes.

Leading by example, MFAT must first examine its own internal policies and procedures to ensure that climate change and disaster risks, and the underlying causes of these risks (including gender, social exclusion, poverty, disability) are considered explicitly and in an integral way throughout the policy and project cycles, from the initial conception and design phase through to monitoring, evaluation, reporting and learning.

In many instances the development process itself has exacerbated risk (UNDP, 2016). For example, a poorly constructed seawall can exacerbate coastal erosion elsewhere. Cyclone Winston revealed that many schools and other public buildings in Fiji were not built according to national building standards. Ensuring that the processes that lead to these decisions both within national government and development partner procedures is fundamental to minimising risk.

Relevant planning, design and monitoring templates and tools currently used by MFAT should be modified accordingly. These include the:

- Operational Policy for Activity Planning;
- Activity Design Document;
- Guideline for Appraising an Activity Concept or Design;
- Activity Quality Policy;
- Activity Implementation Policy; and
- Template for the Programme Strategic and Results Framework.

The adjustments do not need to be radical or costly. The addition of a box requiring a few bullet points to describe what risk-information was used in the design process, whether and how it altered the design, and any resulting actions required to minimise risks may be sufficient to generate the necessary internal processes and discussions that lead to more risk-informed programme design.

Gender markers (MFAT, 2012; MFAT, 2015; GIZ, 2012; DFAT, 2016; DFID, 2008) are now commonplace in development programming to ensure that programmes address gender inequality as part of their design and track programme initiatives to tackle it throughout implementation. Similarly, the introduction of a resilience marker or indicators (e.g. European Commission, 2014a; European Commission, 2014b; CARE, 2014) would provide the framework within which all the initiatives below could be framed.

People are at the heart of any process of change. Staff should be supported to understand why these changes are being made. This could be through compulsory resilient development training that has a strong focus on the underlying determinants of risk. Transforming the development agenda can only happen if the root causes of risk – including social inequalities – are recognised and acted on.

Some practical examples of what this means include:

(i) Adjust the activity design document to take risk into account. For example, in Tuvalu as part of the Pilot Programme for Climate Resilience (PPCR) programme the MFAT template was adjusted to incorporate an additional consideration of resilience (Box A).

Box A

The Government of Tuvalu (GoT) is undertaking a reform programme to improve the effectiveness, efficiency and resilience of its overseas development assistance (ODA). This work has led to the development of the Tuvalu National Aid Policy (2012) and Aid Coordination Unit Operating Procedures Manual (2014).

To support the implementation of these policies and procedures, a series of tools and supporting guidance notes have been developed. One of these tools is the GOT Development Criteria for Project Eligibility Matrix.

The Guidance Note: Appraising Climate Change and Disaster Risk Elements of New Overseas Development Assistance Proposals is part of the GOT Development Criteria for Project Eligibility Matrix tool. It is intended to be a very practical guidance note to assist the Aid Coordination Unit with appraisal of feasibility criteria (v): 'climate change and disaster risks assessed and, if needed, managed'.

The guidance note is organised as follows:

1. Why appraising climate change and disaster risk elements of new Tuvalu ODA proposals is important;
2. Key concepts of climate change and disaster risk management;
3. Checklist of questions that can be used to guide appraisal of climate change and disaster risk elements of ODA proposals;
4. Overview of the Risk Matrix - a qualitative methodology for assessing climate change and disaster risk; and
5. Concluding remarks.

The guidance note identifies two broad approaches that can be considered when designing risk management measures under conditions of climate change uncertainty. These are:

- **Incorporate flexibility:** allow for the possibility of adjustment in the future to cope with effects that are more or less severe than anticipated, or to adapt incrementally. For example installing rainwater collection units that can be incrementally expanded in the future; and
- **Increase resilience:** design the activity to tolerate a wider range of climate conditions, while retaining the same basic structure and functioning. For example, by building a bridge higher than under business as usual. Or by installing a larger size rainwater tank than under business as usual.

(ii) Include resilience markers / indicators within programme results reporting frameworks. The requirement to track the way in which resilient development is being enhanced through the programme necessitates regular reflection among programme staff, and structured consideration as part of internal and external evaluation procedures.

(iii) Develop and introduce compulsory resilience training for staff. This should be incorporated in existing training and staff development processes and can, initially, be as simple as a 15 minute online quiz that all staff are required to complete. Role play games can also help to illustrate, in a short time, the multi-faceted nature of vulnerability and risk. Most if not all of the material required for such training already exists (e.g USAID, 2015; ISET-International, 2016). It would not be costly or time consuming to adapt such materials for use by MFAT. Lessons from similar initiatives should be reviewed. Given the critical importance of social inequalities and natural resources as determinants of vulnerability, this is also an opportunity to mainstream gender, social inclusion, human rights and environmental protection.

(iv) Involve partner countries in the process of adjusting MFAT's internal procedures so that it is a learning opportunity not only for MFAT, but also for partner countries. The inclusion of planning staff from a few key partner countries in this process would demonstrate leadership by MFAT in recognising that it too is going through the same processes that countries are undertaking nationally and that the input and lessons of countries in the Pacific are valued.

(v) Resilience should be on the agenda at all country strategy and partnership meetings and as part of key development partner coordination initiatives such as the Pacific Region Infrastructure Facility. Inclusion of resilience as a standing agenda item for partner country discussions will require an analysis of the underlying context in-country, which in and of itself supports more risk-informed engagement. It also provides the opportunity for partner countries to articulate regularly their priorities and needs in this space.

3.2 Supporting Resilient Development in Partner Countries

The contextual reviews (Working Paper 1 and Working Paper 2) identified strategic investment themes related to needs and priorities, the donor and development programme responses to these needs and priorities, along with gaps and opportunities. The following recommendations distil this research into a manageable number of strategic opportunities for MFAT to consider as part of supporting PICTs to progress their own resilient development agendas. These are based on a consideration of needs and gaps but also MFAT's comparative advantages in terms of sectors and processes. The research also identified situations where multiple development partners are already active in addressing needs and priorities. While these may be important in themselves, they are unlikely to represent value-added opportunities for MFAT engagement.

3.2.1 Invest in Local Government Leadership and Governance Strengthening

Why?

There is a prevalent disconnect between national and local government processes. This, in combination with the limited capacity of local governments, provincial and district offices, and island councils to support risk-informed development planning, implementation and monitoring, favours top-down development decision making. When interventions targeting local communities are designed, and budgets are allocated, by

national-level planners or non-governmental organisations (NGOs), project objectives and work plans seldom reflect the reality on the ground. Exclusion of local leaders from planning and designing interventions can inadvertently undermine the very community resilience structures that development partners are trying to strengthen.

In an effort to ensure participatory programme design, almost every programme consults with local communities about their needs and priorities to varying degrees. This can often lead to perverse incentives such as preferentially selecting communities that are easy to access, or favoured politically. Improved access often advantages communities in ways that make them less vulnerable to natural hazards and changes in climate, and hence in less need of development assistance. In addition, more accessible communities often feel over-consulted about their needs and priorities, becoming increasingly frustrated when there is little tangible progress in addressing them.

Achieving long-term resilient development at community level requires strong local-level governance systems that empower local leaders to control their development planning processes while at the same time working effectively with both sub-national and national governments. To achieve this result, the support provided by development partners must build on existing structures, systems and partnerships, and hence work from within rather than imposing external processes.

How?

Additional investment to strengthen existing national and local structures is required, to enable them to fulfil the roles expected of them. For example, where appropriate, ensure relevant government bodies at both national and local levels have the staff with the necessary knowledge and skills to support risk-informed planning and decision-making processes. This will help strengthen the links between and alignment of national and local planning processes and foster 'bottom-up' community planning processes that incorporate climate and disaster risks.

It is also important to strengthen information management and develop the evidence base so there is adequate information relating to governance structures, community and island development plans, vulnerability assessments, and analyses of exposure and natural hazard risks. This information should be readily accessible by all stakeholders. Any new initiatives should build on the many earlier efforts to develop island and community profiles. Designated positions within government should have responsibility for maintaining and updating these profiles, so they can underpin local and national planning processes. Partnerships between National Statistics Offices, line ministries responsible for specific sector information (e.g. agriculture, fisheries) and ministries responsible for local government should be strengthened, along with the institutions themselves.

MFAT, working in partnership with the relevant national government ministry and other interested development partners, could trial this approach for selected outer islands in Tuvalu and Kiribati. Relationships and understanding that have been fostered by energy investment projects in outer islands in Kiribati and Tuvalu make them appropriate locations for such trial. The EU has recently supported the Phoenix and Line Islands (Kiribati) to complete a strategic plan. Given the existing EU-New Zealand partnership in Kiribati, this could be used as the starting point. By taking a "development-first" approach, and working from existing development plans, support could be provided to strengthen the information base and use this to drive resilient development initiatives.

A tangible strategic opportunity is to build on the innovative work of the Pacific Risk and Resilience Programme (PRRP). It is rolling out the “development first” approach, with a focus on enhancing governance mechanisms to help strengthen the resilience of Pacific island communities to disasters and climate change related risk. Currently PRRP works with the governments and communities of Fiji, Solomon Islands, Tonga and Vanuatu. It is supported by the Australian Government and implemented through a partnership between the United Nations Development Programme (UNDP) and Live and Learn Environmental Education (LLEE).

MFAT could partner with the EU and LLEE to apply the learning of the PRRP. LLEE already has a presence in Kiribati, so it would be logical to demonstrate how strengthening local government leadership and governance in one or more of the outer islands of Kiribati could improve the achievement of resilient development outcomes.

Lessons

Investing in local government leadership and governance strengthening does not deliver quick wins. Institutionalising these processes takes time and hence requires a long-term commitment. For example, the profiles developed for many of the islands in Kiribati provide useful information for decision makers. But there should a longer-term process to regularly update the information and promote its use by all development partners, government agencies and NGOs. Similarly, efforts to promote integrated, whole-of-island planning (Kiribati), or community development planning (Tonga), should be evaluated and replicated, where appropriate.

Strengthening local government leadership and governance is not necessarily resource intensive, but it does require a long-term commitment. It is probably more harmful than beneficial to provide support to do this on a short-term or ad-hoc basis. MFAT is recognised for having flexible and adaptive procedures that are valued by countries and partners alike. This represents a comparative advantage in supporting such work which, by its nature, needs to be adaptively managed. Previously MFAT has provided support for local level governance strengthening. Lessons from these experiences should also be taken into account.

3.2.2 Demonstrate how Existing Support Contributes to Resilient Development Outcomes

Why?

Many areas of existing MFAT support to countries are highly relevant for resilient development, but these benefits are seldom recognised. Highlighting and strengthening the links between existing development assistance to strengthen national and sector planning processes and the resilient development agenda provide excellent entry points for mainstreaming resilience considerations. A few examples of this opportunity are presented below.

How?

MFAT support for **public financial management reforms**, particularly the existing trial of budget support to the Kiribati government, represents an important entry point for also strengthening readiness capacity to access finance for progressing the resilient development agenda. Work to improve aid coordination and the tracking of

development assistance can also support monitoring of climate financial flows. Strengthening procurement procedures, and integrating risk considerations as part of that process, can ensure that contracted suppliers actively contribute to risk reduction. Strengthening the links between the overall budget process, the national development plan and the operational plans of ministries, and integrating risk considerations as part of these processes, can ensure that risk reduction priorities identified in sector policies and plans translate into operational work plans.

MFAT provides significant support for institutional strengthening of the **fisheries sector**. A new regional programme on strengthening fisheries information management has recently commenced. These provide excellent entry points for integrating resilience considerations into fisheries management. Strengthening partner capacity to undertake information and knowledge management assessments can support a better understanding the type of information needed by different stakeholders within the sector (fishers, local and national planners), particularly from the perspective of early warning systems and climate variability impacts on fisheries catches and revenues.

Support for construction of new fisheries buildings (e.g. Tuvalu) also represents an opportunity to involve partners in risk-informed construction processes. The important role of fisheries for livelihoods and food security, as a determinant of resilience, and particularly in outer islands in Tuvalu and Kiribati, should also be further developed.

MFAT support for strengthening **water security** in atolls provides an opportunity to not only address information deficits and infrastructure improvements, but also to strengthen the underlying governance within institutions that are responsible for investment decisions. Supporting decision makers to manage, understand and use risk information is crucial to strengthening resilience. Many projects succeed in producing new information relevant to building resilience but fail to integrate this within existing decision-making structures and staff responsibilities.

Significant efforts have been made over the last decade to integrate climate and disaster risks within **agricultural policies and plans**. Institutionalising these risks in terms of the way extension officers, agricultural planners and the private sector do business is an area that MFAT can contribute to actively through its flagship programme. Diverse and resilient agricultural systems are not always the ones that have the highest short-term profitability. Promoting such systems remains a challenge given the trend away from the traditional food production systems to less resilient but more financially lucrative cash crops. Linking this work to the broader context of the non-communicable disease crisis in the region, and promotion of healthy local foods, is also relevant from a resilient development perspective. Human health is an important determinant of resilience.

A review of opportunities to improve New Zealand's policy coherence for development (Sapere, 2014) noted the success of the **Recognised Seasonal Employer (RSE) scheme** as well as an opportunity to increase the material benefits to PICTs and New Zealand by developing it further. This could include more short term on the job training or qualifications in the RSE scheme. MFAT should highlight existing successes in this regard, especially with respect to such initiatives helping to build resilience in PICTs. For example, Central Otago orchard workers from Vanuatu took part in an exercise to boost their carpentry skills in the wake of Cyclone Pam. They were taught skills such as how to strengthen a building against cyclone force winds, working within a budget and with limited materials. The training scheme was a collaborative effort set up by the Central Otago vineyards and orchards that employ the workers, along with tutoring from Otago Polytech.

3.2.3 Invest Seriously in National Coordination Capacity and in Supporting Information and Knowledge Management Systems

Why?

Several countries in the region are strengthening their national coordination systems for climate and disaster resilience, This will go a long way towards addressing many of the strategic needs and priorities the current research has identified (see Working Paper 1, Manley et al., 2016a). Strong multi-sector coordination at national level supports the identification of entry points within the broader development landscape. These can be used for integrating risk considerations in development planning and actions, to minimise duplication of partner support and to help ensure that a broad range of stakeholders have access to information that informs resilient development initiatives. Strengthening the underlying information and knowledge management systems that support these coordination mechanism is also a key factor in the ability to make risk-informed decisions.

How?

MFAT should build on its comparative advantage in targeted capacity building, especially strengthening individual and institutional capacities, by helping consider boosting the coordination capacity in Tuvalu and Kiribati by supporting the placement of additional qualified individuals within the relevant agencies, including the Office of the Prime Minister of Tuvalu and Office of the President of Kiribati. In addition, support for improved information and knowledge management systems would significantly reduce the time local officials spend in retrieving information for consultants working on development projects. In a developed country ready access to such information is taken for granted.

Over the past few years the Ministry of Finance and Economic Development (MFED) in Kiribati has improved the information available on its website. This includes key national policies and plans, legislation, project documents and also some evaluations. Access to such information supports ongoing efforts to learn and reflect on previous experiences as part of the design of new initiatives. An appropriate starting point would be to assess the strengths, weaknesses, opportunities and risks of this improved access to information, and build on the results to roll out improved systems for Kiribati, and possibly for Tuvalu as well, given there is even greater need for such systems in that country.

Lessons

Investing in improved coordination and information management is a long-term process that requires adequate resourcing. Effective coordination and information management are both areas that require a significant amount of skilled capacity and are crucially dependent on people and relationships.

Technology solutions are rarely successful in removing existing barriers to sharing information. They may form part of the solution, but only as part of a wider approach that facilitates sharing of information. The latter requires significant investment in nurturing partnerships, network strengthening and building trust.

3.2.4 Invest substantially in regional coordination capacity, and give priority to collaborative approaches

Why?

Collectively, regional coordination and collaboration delivers many benefits, including identification of clear pathways to delivering tangible results, economies of scale, involvement of regional organisations and other development partners where they have comparative advantage, and leveraging funding. Regional cooperation helps address many of the climate challenges facing PICTs, and enhance the ongoing national effort to implement ambitious climate change actions. Regional cooperation has a role in increasing technical cooperation, ensuring progress to achieve the Sustainable Development Goals (SDGs) is resilient, and helping raise climate ambitions by tapping into sub-national networks including urban areas, the private sector and civil society.

There is an increasing need for strengthening cooperation and coordination among the Council of the Regional Organisations in the Pacific (CROP) agencies and development partners, to ensure a common purpose in planning, funding and implementation in support of achieving regional and national outcomes that are resilient and sustainable. To date there has been insufficient guidance on the governance and institutional frameworks needed to ensure CROP and other agencies and partner organisations cooperate and collaborate to support countries and territories in their efforts to increase the resilience of development outcomes.

How?

Through better coordination and partnerships the capacity constraints in PICTs can be reduced through a combination of long-term capacity development and supplementation approaches. Guidance on frameworks to facilitate initiatives being undertaken in a coordinated way is now formalised in the FRDP. In September 2016 the Framework was endorsed by Pacific Leaders. They recognised its potential to support coordination and action on a number of key issues related to climate change, disaster risk management and resilient development.

The Pacific Resilience Partnership (PRP) has been established under the Framework, to help ensure its successful implementation. The PRP will bring together the disaster risk management and climate change communities of practice, along with central and CROP agencies and other partners (for example, private sector stakeholders, humanitarian and development partners, sectoral partners) to better coordinate and streamline regionally supported assistance. The PRP will therefore include a broad range of stakeholders with common interests but also with some distinct needs and capacities such as preparedness, early warning capability, engineering skills, emergency management expertise, procurement capability, and risk reduction.

Pacific Leaders have called on all development partners, the private sector and civil society to join with PICTs to engage in high-level participation in PRP. They tasked the Forum Secretariat to convene a Working Group, including Members, CROP agencies, and relevant stakeholders, to elaborate on the PRP process by December 2016, to implement the FRDP.

New Zealand should use its significant convening power and leadership to ensure the PRP will play an important role in implementation of the FRDP. In practical terms the PRP could be guided by a Steering Committee that will provide strategic guidance and

support. It could oversee a Pacific Resilient Development Facility, or similar, that provides technical and wider support to Partnership members, as well as technical monitoring and evaluation of the FRDP's implementation. There would also be an opportunity to link with related climate and disaster risk initiatives for capacity support through the Regional Technical Support Mechanism, the Pacific Humanitarian Team and the Pacific Islands Emergency Management Alliance.

The PRP should develop governance and institutional mechanisms designed to strengthen cooperation and coordination for the effective implementation of regional support to national climate change and disaster risk management initiatives for resilient development. It should bring together all relevant actors to build cooperation, improve collaboration and harmonise systems that support nationally-led resilience building and strengthening. The PRP should include an effective mechanism for accessing the pool of Pacific-based experts to assist with activities such as nationally-led planning and response efforts, damage and loss assessments, procurement and support and advice on donor coordination and funds management.

Lessons

PRP design and operational processes should build on the experience of the Pacific Leadership Programme, the Pacific Region Infrastructure Facility, the renewable energy road map process, the Regional Steering Committee for the Pacific, the Regional Technical Support Mechanism and other similar initiatives. This includes those from other relevant regions, such as the Caribbean. This is especially important when exploring the benefits and design requirements of the Pacific Resilient Development Facility, or similar.

3.2.5 Strengthen the Links Between Building Resilience and Addressing Food, Water, Energy, Gender and Human Rights Needs

Why?

Both the Framework for Resilient Development in the Pacific and the SDGs recognise the interconnectedness of all facets of development. Yet, in many instances, development initiatives are still designed and implemented in silos. Insufficient time is given to understanding the relationships between the diversity of development needs, and to promoting a shared understanding and solutions. This is especially the case at the national level.

At the local level, and by starting with an inclusive community development planning process, these links are often much more visible. Currently the emphasis is often too heavily weighted to promoting regional sharing of national lessons, through regional mechanisms, with insufficient consideration of strengthening local-national learning mechanisms.

How?

Creating opportunities for learning and reflection between and across areas of development practice is a vital part of achieving development outcomes that are more resilient. This may require changes in the way that programmes are designed, to ensure a broader range of stakeholders are consulted and can contribute their experience and expertise to the process. Institutionalisation of learning events both locally and

nationally can also assist. The capacity of national and local government planners and existing coordination structures to drive this process could be strengthened through dedicated support for monitoring, evaluation and learning positions.

3.2.6 Increase the Use of Existing Good Practices

Why?

The Framework for Resilient Development in the Pacific identifies several good practices that need to become “standard practice” if tangible and widespread progress is to be made in ensuring development outcomes are resilient to climate, disaster and other risks. These include ecosystem-based adaptation, environmental impact assessment, building codes, land use planning and protected areas. These practices address the high priority needs of PICTs and are also among in the core competencies of New Zealand government agencies and NGOs.

How?

A long-term approach is to strengthen national and regional education and training curricula and programmes by including both conceptual and practical learning to use approaches and tools that increase the resilience of development outcomes. In the shorter term, support should be provided so that individuals with the relevant knowledge and skills can be seconded to work in relevant parts of government, at both national and sub-national levels. Their job descriptions should include a responsibility to strengthen systems that foster resilient development and to train local staff in the use of relevant approaches and tools, including ecosystem-based adaptation and environmental impact assessment.

3.2.7 Manage Climate and Disaster Risks for Today, as well as for the Inevitable

Why?

Climate change offers an additional set of issues that go beyond conventional notions of sustainability for atoll and island communities. Atoll and island habitability is not simply a function of sea-level rise, but may also be affected by increased temperatures (including impacts on food security - plants, reefs, lagoons and ocean resources - and people’s health) and water resource degradation. The loss of habitability is, and will continue to be, the ultimate driver of forced relocation, including movement of entire communities and villages. Successful adaptation therefore requires interventions that protect and maintain the habitability of islands in the longer term, particularly on atolls. However, since no atoll group in the Pacific is likely to be habitable by the end of the century, other interventions must also take this inevitability scenario into account.

A significant short-term risk for atolls and coastal areas of higher islands is the risk of storm surges and ocean swells, including distant-source ocean swells originating in the mid to high latitudes. The risk of such events is already very high. But the risks will increase further due to the projected equator- and pole-ward expansion of the tropical cyclone belt, sea-level rise, increased ocean surface temperatures, ocean acidification and unsustainable development causing the deterioration of coral reefs, mangroves and other coastal ecosystems.

Because higher islands have more land and freshwater resources than do low islands, they have more long-term options for responding to changes in sea level, rainfall, and other climate variables. However, the amount of land that is flat enough for large-scale settlement, development, and agriculture is limited, resulting in high concentrations of population, infrastructure, and commercial development in the low-lying coastal areas of high islands. Moreover, land rights and land tenure issues are serious impediments to planned relocations and resettlement.

How?

As well as managing the immediately foreseeable risks to development gains, more strategic thinking and approaches are required to address the challenges atolls and low-lying coastal areas of higher islands will face in the coming decades as a consequence of sea-level rise, ocean acidification, coral bleaching and other changes driven by increasing concentrations of greenhouse gases. Responses must be put in place sooner, rather than later. There is an urgent need for effective and sustainable adaptation of livelihoods to prepare for future sea-level rise and other consequences of climate change for the Pacific islands region. It is important to learn from past failures, and build on past successes. Lessons include the need for adaptive solutions that are environmentally and culturally appropriate, with appropriate decision makers being empowered to design and implement them.

An important step would be to develop greater understanding of the processes and implications of changes in atoll and island habitability as a result of the interplay between atmospheric, oceanic, social and economic conditions over the longer term. Such longer-term perspectives are critical when considering strategic responses, such as international migration as an adaptation option for countries facing severe loss of habitability. For example, without improved access to a comprehensive climate risk management strategy that includes options for mobility, a significant proportion of people from Nauru, Kiribati, and Tuvalu and other small islands in the Pacific could be “trapped” by worsening environmental conditions, declining local well-being and few opportunities to either migrate or generate the income necessary for adapting. While Kiribati and Tuvalu face high levels of climate risk they have low to moderate levels of labour mobility. International migration offers the potential for a ‘triple win’, delivering gains for migrants, sending countries, and receiving countries.

Financial and legal barriers are expected to inhibit significant levels of international environmentally-induced migration in the Pacific. Moreover, resettlement, migration and related adaptation strategies should be regarded as options of “last resort” on at risk islands, as they may actually discourage viable adaptation initiatives, by fostering overdependence on external support. For this and other reasons, research into the possible un-inhabitability of islands has to be undertaken with sensitivity in order to avoid short-term risks (i.e., to avoid depopulation and ultimately island abandonment) associated with a loss of confidence in an island’s future.

On the other hand, well-managed migration can increase the adaptive capacity to cope with climate change. Migration can increase: i) resilience to crises; ii) capacity to cope with future impacts of climate change; and iii) diversification of opportunities for an economy based on multiple sources of revenue. However, if migration is to be adaptive, careful policy planning and well-placed policy interventions are required.

3.3 Develop the Capacity Needed for Resilient Development

Managing change is crucially dependent on capacity to support the process. This section outlines key opportunities to strengthen the individual, institutional and network capacities required to achieve resilient development. Many of the opportunities identified below are being supported by the EU, at least to some extent. Taking up these opportunities could be facilitated through collaboration with the EU under an expanded partnership.

3.3.1 Continue and Expand Support for National Technical and Vocational Education and Training Institutions

Why?

National technical and vocational education and training (TVET) institutions in the region are seriously under-resourced. But a strong TVET sector is important for developing and maintaining the skills that will be needed for resilient societies (e.g. plumbing, solar maintenance and installation, resilient agriculture, enterprise development). Ensuring the work force of PICTs has such competencies would help address the high priority needs of PICTs. Many New Zealand government agencies and NGOs have considerable expertise and relevant experience in supporting TVET.

How?

Increased resources are needed to support national TVET institutions to deliver in-country training. Wherever possible, short-term training required as part of project implementation should be delivered in conjunction with national TVET institutions, preferably as part of new or existing TVET courses. This approach often takes more time and planning to fit in with existing course structures. It may also involve strengthening the TVET institutions directly, including their course offerings. But the likely result is a more sustainable approach to short-term capacity development. Links should be made with the EU-PacTVET project to explore other collaboration opportunities. A gap analysis conducted in 2015 provides a useful stocktake of courses relevant to resilient development and country needs.

As part of MFAT's flagship programmes in agriculture and energy, as well as others of key importance including fisheries, efforts should be taken to ensure that local TVET providers can meet the requirements of the sectors going forward, taking into account the need for training in risk management and in resilient development. An example is the support provided to the Marine Training Centre in Kiribati. This is an important way to strengthen livelihoods and to help fishers meet the standards of the export market.

Specific courses in disaster risk management and project management are being developed as part of the PacTVET programme. SPC also institutionalised a disaster risk management course within the Fiji National University. These courses should be promoted within existing programmes to reinforce the cycle of strengthening national institutions.

Lessons

Strengthening TVET programmes requires both time and strong leadership within the national institution. Experiences from the Climate Change in the Pacific Islands Region

project and from PacTVET support to the sector suggest there is significant unmet demand to integrate risk considerations into existing courses. An important part of enhancing capacity is working through and with key champions in the education sector, as well as strengthening partnerships between educators, planners, climate change and disaster risk management practitioners.

Supporting existing programmes that have laid the foundation for TVET, but have limited resources, would reduce the time needed to mobilise the much-needed TVET programmes.

3.3.2 Further invest in the University of the South Pacific to Boost its Ability to Deliver on its Regional Mandate of Education and Research

Why?

The University of the South Pacific (USP) plays a key role in educating the next generation of Pacific leaders. The post-graduate certificate and diploma in climate change and disaster risk reduction provides young graduates with important foundational knowledge that allows them to enter the workplace with relevant skills to support resilient development in whichever field they enter. More broadly, integrating resilient development principles across the University in courses such as economics, agriculture and marine studies would provide students with a broader framing of development.

USP is also a regional hub for climate change and disaster risk management research and opportunities exist to strengthen the relevance of the research to inform practical initiatives to ensure the resilience of development outcomes.

How?

Much of the climate change and disaster finance available to date has been tied to project implementation. As a result, USP's Pacific Centre for Environment and Sustainable Development is often distracted by the need to implement projects, leaving staff with less time to work where they and the institution have a comparative advantage, namely in teaching and research. Secure and longer-term funding that supports USP's mandate would allow staff to more actively focus on teaching, to assist students identify relevant workplace attachments, and to conduct their research and support the broader community in generating and sharing knowledge.

Strengthened partnerships between USP and other educational institutions can also support mentoring and collaborative research opportunities.

3.3.3 Invest in the Design and Roll Out of a Regional Volunteer Scheme

Why?

Many young graduates from USP and other educational institutions in the region struggle to find employment within their field of study. Many development partners allocate a small portion of their aid budgets to supporting international volunteers. In Australia's case this is around 1%, amounting to AUD 39.6 million from a total budget of AUD 3.8 billion. There is a strategic opportunity for MFAT to invest a similar portion of

the New Zealand Aid Programme budget in a scheme to support local volunteers. This would be a cost-effective way to accelerate the sharing and uptake of resilient development practices, to provide young graduates with relevant workplace experience, and to ensure volunteers have a grounding in the cultural context of the region.

How?

In partnership with other development partners, particularly Australia's Department of Foreign Affairs and Trade (DFAT), and in support of the FRDP as well as of 2015 Pacific Framework for Regionalism, MFAT might wish to invest in establishing and supporting a regional scheme that would enable *local* volunteers to gain workplace experience whilst meeting the capacity shortages of local NGOs and smaller organisations that struggle to access funding for qualified staff.

3.3.4 Invest in local Civil Society Organisations to Support Implementation of Resilient Development Initiatives

Why?

In many countries in the region, particularly in the small island states, absorptive capacity is an issue. It is relatively common for mid-term reviews of projects to identify under spending and delays in implementation as a result of capacity constraints. This often results in consultants being hired to accelerate the implementation of activities. This is hugely ironic given that, as noted above, many local Civil Society Organisations (CSOs) struggle to access funding for qualified staff.

In the Pacific, CSOs including faith based organisations (FBOs), deliver many basic services such as primary education, health, water and sanitation, as well as advocacy for marginalised groups including victims of violence. CSOs are also likely to have stronger networks incorporating local communities and be more in touch with their needs and priorities. They are also likely to have a broader understanding of the interconnectedness of issues, such as social inequalities and access to land, and how these amplify climate and disaster risks. Greater use of CSOs in government-led projects could enhance implementation capacity, provide a greater voice to marginalised communities and support a "development-first" approach to managing climate and disaster risks to sustainable development outcomes. It is important that governments build such capacity into their development planning and initiatives.

How?

MFAT should strongly encourage the use of local CSOs in supporting the delivery of its aid programme, and provide targeted resources that will enable CSOs to meaningfully engage in promoting resilient development. Building trust between national governments and local CSOs is a key part of strengthening partnerships. CSOs are often at the frontline of humanitarian responses. Building strong networks to support resilient development can also result in more effective responses to a natural hazard event. Adding a CSO dialogue session to partnership discussions in country could support this. The dialogue and follow up activities could explore opportunities for local CSOs to partner with CSOs based in New Zealand.

3.3.5 Build the Capacity of Local Consultants through a Mentoring Programme

Why?

International short-term consultants often have little understanding of the cultural context. As a result, they are unlikely to be able to generate local trust and ownership of initiatives in a short space of time.

On the other hand, local consultants have a better understanding of the cultural and political contexts. Capacity developed before and while undertaking their assignments is likely to stay within the region.

Many countries in the region have low compulsory retirement ages. As a result, significant amounts of institutional knowledge and capacity is lost from the civil service each year. This loss could best be offset by mobilising local consultants with relevant knowledge, expertise and experience.

How?

MFAT should utilise local consultancy capacity wherever possible. But when international consultants are used to scope, plan, design, implement and evaluate MFAT investments, MFAT should also require the use of local consultants. Local consultants should form an integral part of the team and not simply be used to organise meetings, provide logistics and undertake other relatively menial tasks.

A more considered and productive approach has been taken by the ADB as part of the Kiribati State-Owned Enterprise reform process. This has generated positive results.

In-country programmes could be developed to use international consultants as mentors to local consultants, to enhance their skills in developing technical and financial proposals, responding to expression of interest requests, report writing, and general research skills. Building such expertise should be framed by a “development first” approach.

Establishing a pool of local consultants to support resilient development initiatives will take time, but a relatively straightforward change in consultant procurement procedures and the terms of reference for international consultants could facilitate this in a cost effectively manner.

3.3.6 Invest in Increasing the Resilience of Small and Medium Private Sector Enterprises

Why?

Small and Medium Private Sector Enterprises (SMEs) provide employment and services in local communities. Revenues generated by their activities are likely to be retained and spent locally. SMEs may be too small to engage in larger business networks, such as Chambers of Commerce and Employers Federations. They are also unlikely to be covered by insurance.

Supporting SMEs to develop business continuity plans, and engage in wider discussions with other business people on preparedness and response, provides another avenue to promote resilient communities.

How?

Support national institutions – such as Chambers of Commerce – to reach out to SMEs and provide support with business continuity planning, as part of the overall business plan of the SME. This should be undertaken by training providers, or through partnerships with larger local businesses that have a sound understanding of the cultural and business contexts. International companies and trainers with no practical experience of the Pacific are unlikely to be able to offer relevant support.

The support should include actively identifying opportunities to build trust between the private sector, CSOs and both national and sub-national government agencies. Having the private sector, including some SME representatives, participate in a wider dialogue related to partnership talks in-country could help to facilitate this.

3.3.7 Reduce the Number of Regional Training and Other Workshops

Why?

Regional training initiatives and other workshops are expensive and disruptive. Their effectiveness as a mechanism to build capacity is questionable. The cumulative effect of such initiatives is that each year many government staff engaged in project implementation spend months out of their countries. When they are in country they have limited time to address national priorities. This often contributes to delays in project implementation.

It is important to note that international travel often represents a supplement to the incomes of government officials. A more effective way of ensuring fair remuneration, such as through salary top ups where projects lead to additional responsibilities, should be found.

How?

Regional training sessions and other workshops should require additional justification over and above comparable in-country initiatives. National and other in-country training should be the default mechanism for capacity development initiatives. It can be just as cost effective to train say, twenty people, in each country, than to have one person from each country participate in a regional training initiative.

Existing mechanisms that bring stakeholders together should be utilised wherever possible, including serving multiple objectives. This would benefit from a coordinated approach involving other development partners and regional organisations. MFAT could usefully lead a discussion to develop a common position. The Pacific Resilience Partnership proposed as part of the FRDP could also play an important role in this regard.

3.4 Opportunities at Sector and Thematic Levels

Consistent with the guidance in the FRDP on approaching risk and resilience from a “development-first” perspective, and in finding integrated solutions, one opportunity is ensuring that sector and thematic programmes are integrated into the broader resilient development agenda. In addition, the following sections identify specific strategic opportunities for addressing the needs and priorities identified in Working Paper 1 (Manley et al., 2016a).

3.4.1 Renewable energy (Flagship)

A strengthening of the whole energy system can be achieved through implementing renewable energy generation and thereby reducing the reliance on imported diesel fuel. This should:

- Reduce the cost of supplying energy;
- Reduce fuel supply risk;
- Reduce fuel storage and transportation risk;
- Reduce cost volatility; and
- Add diversity to the power supply.

The main renewable energy technologies available to PICTs are:

- Solar photovoltaic (PV) – Relatively simple and low maintenance, good resource in PICTs, uses large areas of land; available rooftops are quickly used up;
- Wind power – Often lower levelised cost of electricity (LCOE) than solar PV; acceptable resource; requires more maintenance; greater vulnerability to extreme wind speeds, although some turbines can be configured to reduce damage risk; few suitable suppliers in the PIC market; visual impact and noise concerns;
- Biomass generation – Resource availability and cost must be considered; biomass resource is typically insufficient on atolls; high labour requirement;
- Ocean thermal energy conversion – Considerations of technology maturity and suitable sites;
- Tidal power – Considerations of technology maturity and suitable sites;
- Wave power – Considerations of technology maturity and suitable sites.

If the opportunity is taken to programme renewable energy, taking climate and disaster risks into account at the scoping stage, a number of co-benefits have the potential to be realised, including:

- Provision of amenity in outer islands thereby reducing migration to main islands – a major concern for Kiribati is migration from the outer islands to densely-populated South Tarawa;
- Potential to produce water, either through collection of rainwater runoff from solar PV panels - the recently installed solar PV plant in Majuro does this - or by powering desalination plants; this benefit is consistent with MFAT’s focus on water security; and
- Protecting water reserve areas - the recently installed solar PV plant on the Bonriki water reserve in South Tarawa has been fenced, prevents unauthorised settlement on the water reserve.

Renewable energy systems have different vulnerabilities to traditional power systems. The systems must be designed according to appropriate International Standards, such as those applicable to Australia and New Zealand.

Energy investments in PICTs have mostly been undertaken in an ad hoc manner. Most if not all renewable energy activities in Kiribati and Tuvalu have been implemented through donor funding. Until recently there has been little coordination between donors. Last year MFAT initiated an energy coordination activity in Tuvalu. As renewable energy penetration levels have increased in both Kiribati and Tuvalu, there are now few, if any, further opportunities to implement uncontrolled grid-connected renewable energy systems. Both the recent United Arab Emirates-funded 500 kW solar PV plants in Kiribati and Tuvalu incorporate technology to curtail production to ensure grid stability.

Thus any further investments in solar PV or other renewable energy systems must be carefully planned and coordinated in order to prevent inefficiency and wasted funding as a result of infrastructure becoming redundant or unusable. Coordination of development partners for infrastructure development in the Pacific region, including Kiribati and Tuvalu, is the role of the Pacific Region Infrastructure Facility (PRIF), of which MFAT is a member.

Further projects of a significant scale will need to include grid integration technology, such as renewable generation curtailment, active generator control or energy storage system support. Coordination with desalination plants or other activities, such as water pumping or cold stores, can allow the integration of greater amounts of renewable energy onto the system. Consideration should also be given to east-west solar PV panel orientation. In many PICTs improvements in the distribution network are essential to reduce losses and enable plant integration.

Geographic diversity of solar PV and the addition of wind power to the generation mix can contribute to the flexibility of the system and resistance to central shocks. Resilience of the system has the potential to be improved through reorganisation of the electricity transmission system into networked microgrids. In conjunction with a grid-forming battery and inverter system, solar PV systems can be built to supply power in the event of a disaster.

Risk-informed energy projects should be built to survive disaster events. It is essential that utilities have the resources and capacity to maintain energy infrastructure.

In order to achieve the high (up to 100%) penetration of renewable energy PICTs have committed to, cutting-edge technical solutions will need to be implemented. It is expected that partnerships will be required with leading technology firms that have “off-grid” (i.e. island-scale or smaller) solutions.

Meteorological services can assist renewable energy integration by providing high quality renewable energy resource forecasting. There is a need for institutionalised training for energy efficiency and small-scale renewable energy system implementation and maintenance.

The transition to a low carbon economy will require the engagement of national and local governments, private sector, civil society, and all development partners. At both regional and national levels the Pacific has committed to ambitious targets for transforming their energy systems to be sustainable and low carbon.

The New Zealand Government has demonstrated regional leadership in partner coordination and leveraging additional finance, particularly through the Pacific Energy Summits held in 2013 and 2016. It has also contributed actively to increasing the investment in renewable energy in the Pacific. This leadership role should continue and MFAT should look for opportunities to play a greater role in supporting countries by further improving donor coordination at the national level.

Support to countries in the areas of regulatory reform, energy planning and enhancing access to finance can only be sustained over the longer term with sufficient investment in institutional strengthening within key national coordination mechanisms. Part of this should include, where relevant, expanding the membership of such mechanisms to include climate change and disaster risk and social inclusion specialists.

Risk profiles developed to inform policy-related work, including risks to grid-stability, should include climate change and disaster related risks. These should be used in feasibility assessments, particularly in terms of siting infrastructure, procurement and contractual processes, and be factored into budgets. The installation of solar panels on Tuvalu's outer islands was interrupted for months following cyclone Pam., even though the siting of the infrastructure did include a disaster related risk assessment.

A crucial challenge in the region is ensuring that equipment is maintained in good operating condition. Fostering ownership of externally-financed assets requires investing time in working through and with local governance structures, and providing support to strengthen these existing structures where appropriate. The starting point for any intervention should be the relevant Island Council / District or Provincial development plan, which should be aligned to the national level planning frameworks. Supporting the relevant local coordination bodies develop a tracking mechanism (including energy investments) for their development plans could support their active engagement in ongoing monitoring. Linking asset management and maintenance to these plans is also vital.

It is crucial that investments are driven by development needs. Explicitly linking the investments – through the development plan and during the course of their construction and ongoing maintenance– to the needs of the various stakeholders in the community – men, women, youth, children, educators, health workers, farmers, fishers – can also help to foster community ownership. Explicit links to livelihood opportunities can also strengthen the economic resilience of communities.

Engaging churches and schools in the active monitoring of the investments has a win-win of integrating resilient development into the education system and nurturing local ownership of the investments. Opportunities to link energy investments to existing community development planning and whole-of-island approaches should be explored. Where none exist, consideration should be given to facilitating their development.

Options for alternative financing mechanisms for renewable technology should be explored where appropriate. Grant-funded schemes, with limited investment or cost-recovery from beneficiaries, are likely to have a lower chance of sustainability.

Another key issue in ongoing maintenance is the development of appropriate skills nationally and locally to maintain renewable energy equipment. Investing a proportion of the overall costs of the infrastructure in strengthening TVET courses, and training national staff and community members as solar technicians, will be a sound investment in longer term sustainability.

Given MFATs investments in renewable energy and energy security in Kiritimati Island and in the outer islands of Tuvalu, it is recommended that the preceding recommendations be actioned as part of an integrated / whole-of-island approach in selected islands, including supporting peer-to-peer learning as part of the process. This should be undertaken in coordination with other development partners, but with national and local partners taking the lead, supported by a coordinated effort.

MFAT may wish to consider:

- High quality communications and internet connectivity is now essential for modern power systems. Monitoring of the Performance Ratio of remote solar PV systems can alert staff of the need to undertake maintenance. In South Tarawa, as part of the recently installed, controlled solar PV plant, a 7 km long fibre-optic cable was installed. This enables the system to respond to the requirements of the grid;
- Implementation will need to become increasingly smart and targeted. Consider the use of electric vehicle charging and other interruptible loads to smooth power demand;
- The necessity of coordination of development partners;
- Opportunities to target the development of enterprises by provision of the energy needed;
- Power systems are becoming increasingly complex. Consider whether it is realistic for staff in these countries to do anything more than supply labour and basic operations and maintenance.

3.4.2 Water Security and Resilience

Many of the opportunities highlighted with reference to the energy sector (Section 3.4.1) are also applicable to the water sector, so are not repeated here in any detail. These include institutional strengthening, linking asset monitoring and maintenance to local development plans, engaging churches and schools in ongoing monitoring, making explicit the links between water security and development goals (including livelihood opportunities) and developing local capacity through TVET programmes. Integrating improvements in water infrastructure to wider community development planning as part of integrated / whole-of-island approaches is also important.

There are strong water security / energy security links in many countries and the resilience of the energy system often plays a crucial role in water security, particularly for urban areas. It is common in the immediate aftermath of a cyclone, for instance, for energy outages to cause water shortages.

Additionally, a few water-specific opportunities are highlighted below.

MFAT, through the Pacific Community (SPC)-led Strengthening Atoll Water Security, has an opportunity to strengthen the information base for atoll water resources.

Over the years, many development partners (e.g. Asian Development Bank, World Bank, Australia, New Zealand, EU) have contributed resources to generate useful information for decision makers, particularly for forecasting and managing droughts. This includes rainfall data, water infrastructure (cisterns, wells, rainwater harvesting systems), groundwater resource mapping, inundation mapping and various models that determine groundwater and reservoir recharge rates. Much of this information is scattered – within national, regional, international institutions and on consultants' laptops! A coordinated approach among partners – perhaps led by national water management authorities, statistical offices and meteorological offices in one or two

atolls and supported by PRIF/SPC/United Nations Children's Fund (UNICEF) - could bring much of this useful information together. This would significantly enhance the ability of planners and decision makers to inform integrated water resource management and resilience in atoll countries. Linking these efforts to ongoing monitoring of water security and SDG reporting would support existing efforts and coordination mechanisms, both nationally and regionally.

Effective information management requires additional resources. All too often programmes invest in generating new information but do not allocate sufficient resources for managing that information and linking it with other relevant information sources to maximise its usefulness for decision makers and planners, in the longer term. SPC has strong water resources and statistical support teams. Providing them with additional resources would make it possible to trial this approach on one or two atolls. If linked to the existing programme, the support could generate transformative change. There are also strong links to the Global Environment Facility Ridge to Reef project, with SPC playing the regional coordination function.

In the water, sanitation and hygiene (WASH) area (see also Health section below), it is proposed that additional resources be allocated for strengthening the ability of local CSOs to deliver programmes (see Section 3.3.4 above). Behavioural change takes time, but positive results in changing attitudes around open defecation have emerged from long-term coordinated development partner engagement in Kiribati. A multi-disciplinary team, including the Ministry of Internal Affairs and the Women's Federation, was crucial to providing support to local Island Councils.

Replicating these approaches, including working with and through local councils, schools and churches, could increase the acceptability of composting toilets. These have less impact on groundwater resources than do conventional systems. Working with and through local government authorities will also ensure messages are reinforced. Local CSOs can also support these efforts. Engaging schools is a key strategy for changing behaviour early.

3.4.3 Health and Disease Control

Many of the links between resilient development and health are indirect, through their impacts on water resources and food production. In addition, growth of the non-communicable disease epidemic in the Pacific has meant that communicable diseases, and disease control, have received relatively less attention over recent years.

Thus the health sector has not been the focus of many climate change adaptation projects in the Pacific, despite featuring in National Adaptation Plans of Action, Joint National Action Plans and climate change policies of most countries. A World Health Organisation-funded project supported preparation of climate change and health action plans for each country. However, these were not well linked to the overall national development plans. As a result, very few of the actions identified in the action plans have been integrated into the national development plan or the operational work plans and budgets of Health Ministries.

Key to improving the ability of national governments to monitor climate-sensitive diseases is sustained investment in institutional strengthening and information management within the environmental health units of the Ministry of Health. MFAT is building on recent experiences of SPC and New Zealand's National Institute for Water and Atmosphere (NIWA) in Kiribati to strengthen the capacity of the Ministry of Health and Medical Services to test water quality and use solar disinfection of contaminated

groundwater supplies. Community engagement and a specific behavioural change campaign were important components of this work, which resulted in reductions in diarrhoea levels in targeted communities. When replicating and upscaling these approaches, MFAT would be advised to integrate them within its urban development initiatives, and partnering with a local NGO to support replication.

Other opportunities relevant to the health sector are discussed in relation to WASH (see Section 3.4.2 above).

3.4.4 Oceans and Fisheries

MFAT is already responding to many of the opportunities highlighted above. These include strengthening the institutional capacity of national fisheries ministries and authorities, and improving the knowledge base for planners and enforcement agencies.

Linked to these efforts is an opportunity to strengthen the capacity of national fisheries institutions to utilise information on climate change impacts on migratory patterns of fish stocks. This is important for long-term planning and revenue forecasting. Securing sustainable and predictable revenue from fisheries is crucial in building long-term economic resilience. Linking these measures further, to public financial management reform processes, is a key component of supporting efforts to improve transparency, accountability and improved governance of national budgets.

Strengthened links between national meteorological services and fisheries agencies can support improved safety measures for fishers, and should be built into national fisheries policies and plans.

At the local level, efforts to enhance livelihood opportunities from coastal fisheries and aquaculture should be firmly integrated into local and island level planning mechanisms. Support for TVET to maximise the potential employment and income generating opportunities from coastal and oceanic fisheries is also a crucial part of achieving resilient livelihoods, particularly in atoll environments with limited resources.

MFAT support for ocean acidification research should be strongly linked to coastal fisheries programmes. It should aim to strengthen partnerships between the Secretariat for the Pacific Regional Environment Programme, SPC and USP. There are also many NGOs (e.g. World Wide Fund for Nature, International Union for the Conservation of Nature, Wan Smol Bag) working to support coastal fisheries management in the region. Their expertise and involvement should also be nurtured.

3.5 Finally, Don't.....

3.5.1Try to do Everything

There are many opportunities to progress the resilient development agenda in the region. MFAT has significant comparative advantage in some sectors and countries, and well-established partnerships with other development partners, particularly the World Bank, the Asian Development Bank, DFAT and the EU. A coordinated approach to the opportunities should be discussed and agreed with partners. As DFAT is currently reviewing its climate change and resilience programme, and given the strong guidance in the newly endorsed FRDP, discussions around areas of joint programming are likely to be timely and productive.

Building on formal partnerships as part of PRIF, such as those with DFAT, the Asian Development Bank and the EU, MFAT should explore opportunities for further joint programming with partners. For example, in the area of climate services, New Zealand institutions such as NIWA have good track records of providing targeted support to PICTs. However, Australia and the United States have significantly more resources and capacity. New Zealand should also seek to partner with initiatives led by others.

3.5.2Try to Lead Partner Coordination Without a Strong In-country Presence

Without a strong in-country presence it is difficult to be successful in leading development partner coordination in a way that recognises, strengthens and takes its directions from national coordination mechanisms.

4. Summary and Recommendations

This report identifies several strategic opportunities for MFAT to invest in resilient development, climate change adaptation and disaster risk management. The opportunities were identified through two contextual reviews. The first was a review of the existing and emerging needs of Pacific island countries and territories with respect to climate change adaptation and disaster risk reduction, in a development context. The second was a review of the ways in which the PICTs, and their development partners, are addressing these needs.

The recommendations relate to how MFAT can promote a development-first approach to resilience and risk governance, in both its own internal procedures and in the support it provides to countries in the region, including Kiribati and Tuvalu specifically.

Leading by example, MFAT must first examine its own internal policies and procedures to ensure that climate change and disaster risks, and the underlying causes of these risks, are considered explicitly and in an integral way.

In addition, MFAT should:

1. Further invest in strengthening local government and community leadership and governance.
2. Demonstrate how its existing support contributes to resilient development outcomes.
3. Invest substantially in national coordination capacity and in supporting information and knowledge management systems.
4. Invest substantially in regional coordination capacity, and give priority to collaborative approaches.
5. Strengthen the links between building resilience and addressing food, water, energy, gender and human rights needs.

Other important opportunities are also identified. These include: (i) continue and expand support for national technical and vocational education and training institutions; (ii) scale up investment in the University of the South Pacific to boost its ability to play a key role in educating the next generation of Pacific leaders, including through the post-graduate certificate and diploma in climate change and disaster risk reduction; (iii) invest in the design and roll out of a regional volunteer scheme; (iv) further invest in local civil society organisations to support implementation of resilient development initiatives; (v) build the capacity of local consultants through a mentoring programme; (vi) invest in increasing the resilience of small and medium private sector enterprises; and (vii) reduce the number of regional training and other workshops.

The Ministry should also consider opportunities related to renewable energy, water security and resilience, health and disease control and oceans and fisheries.

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