Building Capacity – Implementation of an outcome focused, collaborative approach to building capacity: A case study from the Seychelles water sector

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Abstract

Seychelles is a Small Island Developing State (SIDS) with a population of 91,000. This presents challenges with respect to the capacity of the population to provide trained and experienced water sector specialists to support water security across Seychelles.

The resource efficiency programme for the Seychelles water sector (REPSWS), supported by the European Union, is an accompanying measure to a major water & wastewater investment programme funded by the European Investment Bank and Agence Française de Développement, working with the Seychelles Public Utilities Corporation (PUC). It addressed three key challenges in the Seychelles water sector:

1) enhancing energy efficiency across the PUC's water supply systems;
2) future water demands and water security, and
3) developing water supply measures for the main islands to 2030.

The programme design was developed to maximise capacity building within the PUC, through for example, staff training and development activities. However, once operational, REPSWS adopted an outcome focussed, proactive and adaptable approach that sought to amplify capacity building opportunities. These were not just focussed on the PUC, but took a wider perspective including working with other state institutions and donor funded organizations and projects.

Activities associated with capacity development included, for example, strengthening PUC capability in hydrological and water resources analysis through staff training sessions. This was facilitated through the selection of water resources planning software that was both appropriate to the needs of the project, but that provided a sustainable platform going forward.

REPSWS proactively sought collaboration and capacity development opportunities with other state institutions. For example, REPSWS facilitated a memorandum of understanding (MoU) between the Seychelles National Meteorological Service (NMS) and PUC regarding the future operation of new REPSWS-funded meteorological stations. The NMS were fully engaged in all aspects of the siting, specification, installation and commissioning of these instruments, and were in receipt of appropriate training. This aligned the REPSWS investment to where it would deliver maximum returns to the Seychelles science base and into later policy development and decision-making.

Coordination activities were initiated by REPSWS with other donor funded projects, supported by the Government of Seychelles. Outcomes from this included activity sharing, for example a MoU was signed with a parallel project on results sharing from a social survey on water use. These results were directly used by REPSWS to refine initial, assumption based, water demand projections. This directly strengthened these results to inform policy recommendations around demand management.

The successes presented here demonstrate that adopting an outcome focused, collaborative and adaptable approach delivers benefits that can extend beyond the immediate technical and institutional scope of a project or programme. Additionally, seeking mutual benefit through the understanding of shared objectives in a collaborative manner, can result in benefits for all those concerned. Programme design should recognize this and seek to move away from a process based approach to capacity building and adopt an outcome focused approach that takes a wider and longer term perspective to capacity development. This needs to be centred on the most appropriate institutions and individuals, strengthening the science –technology base to support future policy development.

Introduction and Background

The Republic of Seychelles (Seychelles) is a 115 island archipelago located in the western Indian Ocean. It has a population of 91,000, the vast majority of which inhabit the islands of Mahé, Praslin and La Digue. Seychelles is classified by the United Nations as a Small Island Developing State (SIDS).

The resource efficiency programme for the Seychelles water sector (REPSWS), supported by the European Union, is an accompanying measure to a major water & wastewater investment programme funded by the European Investment Bank and Agence Française de Développement, working with the Seychelles Public Utilities Corporation (PUC), It addressed three key challenges in the Seychelles water sector:

1) enhancing energy efficiency across the PUC's water supply systems;
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3) developing water supply measures for the main islands to 2030.

Give the size of the population, Seychelles faces recurring issues around the development of appropriate expertise in the water and related sectors. For example, the Seychelles National Meteorological Service (NMS) regularly has to call upon

fellow member states of the Southern Africa Development Community (SADC) to provide in-country expertise to support its functions.

REPSWS Approach to Capacity Development

The programme design was developed to maximise capacity building within the PUC, through for example, staff training and development activities. However, once operational, REPSWS adopted an outcome focussed, proactive and adaptable approach that sought to amplify capacity building opportunities. These were not just focussed on the PUC, but took a wider perspective, including working with other state institutions and donor funded organizations and projects.

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REPSWS' scope of works included the following specific activities:

- Review and identify available water storage options in catchments where dispersed surface water resources have potential to be exploitable;
- Outline a program of possible engineering works to optimize storage of available surface water (expected to be mainly ephemeral high-volume quickflow) and elaborate ways to integrate this with a long-term strategy of conjunctive use of all available sources of water;
- Evaluate the scale of storage from multiple small-scale storages to single basin storages, including the associated economic costs and benefits; and
- Compare the economies of in-stream, off-stream and lagoon storage, including the cost of water quality protective measures.

In addition to this, the scope further noted that:

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- Provision of training that elaborates procedures and methods for data processing to analyse drought frequency and intensity, storage optimization, surface water utilization, and climate-change trends, including rainfall-intensity / rainfall-physiographic effects / runoff relationships, and their utilisation for water resources estimation.

To deliver the outcomes from these activities, it was clear that there was a need to make use of water resources modelling software. Therefore, soon after the commencement of REPSWS, a review of available modelling platforms was undertaken. Following this review, it was agreed with the PUC and EIB to purchase licences to make use of the WEAP (Water Evaluation and Planning System) platform (Stockholm Environment Institute, 2017):

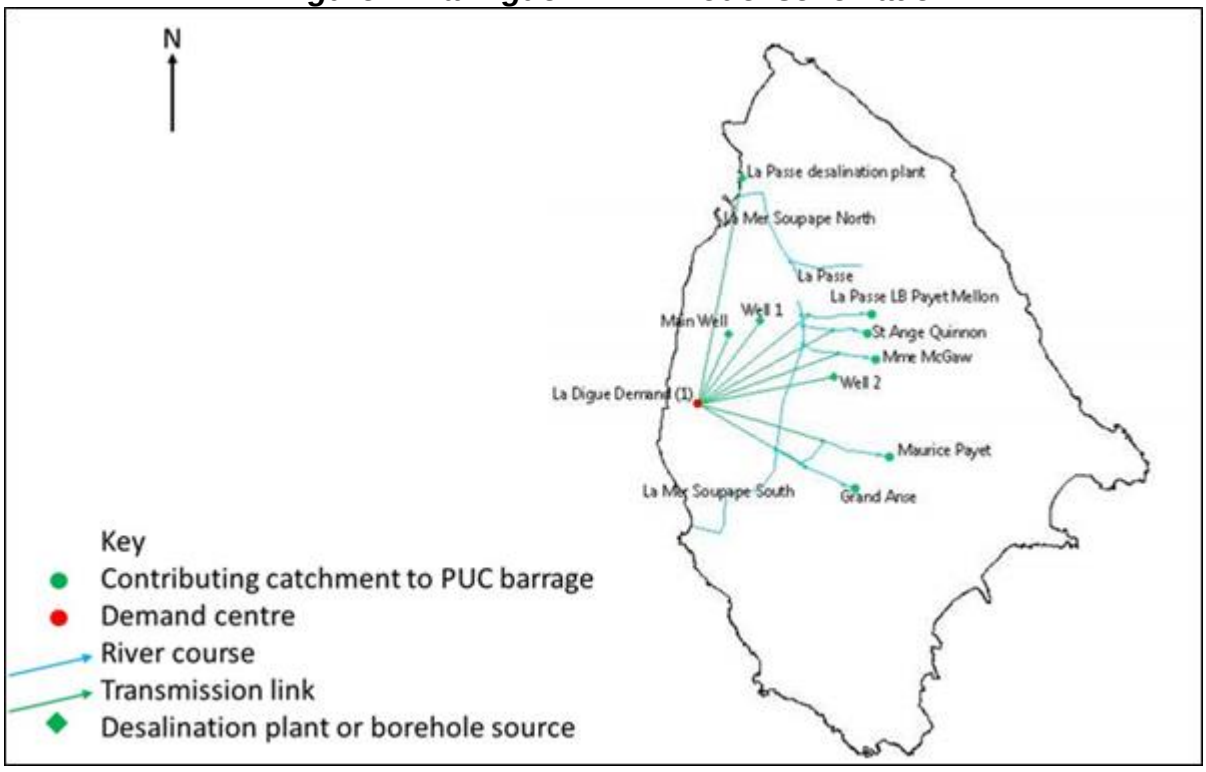
The WEAP software was selected for the following reasons:

- A full range of functionality to include both natural and man-made water cycles (surface water and groundwater sources, agriculture and urban water cycles).
- Inclusion of a scenario builder, so a set of alternative assumptions about future impacts can be explored as well as an evaluation tool to compare scenarios based on water sufficiency, cost, benefits, and compliance against environmental targets and sensitivity to key variables.
- Use of an intuitive GIS based user interface.
- Availability of significant on-line support and resources, with an active user community.
- Potential to link to “sister” energy use programme “LEAP” (Long range Energy Alternatives Planning System).
- A strong track record, with extensive project references and available case studies across developing states and regions, including SIDS.
- Licence costs that reflected that Seychelles was a designated SIDS.

WEAP had also previously been used in Seychelles to explore climate change impacts on the Seychelles water sector in the Second National Communication to the UN Framework Convention on Climate Change (Ministry of Home Affairs, Environment, Transport and Energy, Government of Seychelles, 2011).

In making use of WEAP to deliver REPSWS’ water resources related aims and objectives (see example of WEAP implementation on the island of La Digue in *Figure 1*), the capacity development activities were implemented through a “*learning by doing approach*” with a nominated water supply specialist from the PUC. This successfully delivered an appropriate level of training, and ensured the sustainability of the WEAP modelling work following the completion of the REPSWS programme.

Figure 1: La Digue WEAP model schematic



Promoting Coordination across Donor Funded Water Sector Projects

During the inception phase of REPSWS, it became apparent that there were a number of other donor funded projects at various stages of implementation in the Seychelles that potentially shared a number of cross-cutting and complementary objectives, activities and outcomes in the wider water sector. These projects are listed below:

- Ecosystem-based adaptation to climate change in Seychelles funded by the Global Environment Facility (GEF), being implemented by the Government of Seychelles / UNDP / GEF Programme Coordination Unit ("Ecosystem").
- Diagnoses of Floods and Plan of Action for Seychelles funded by BADEA working with the Ministry of Land Use and Habitat / Ministry of Energy and Environment ("Floods").
- Implementing Integrated Water Resource and Wastewater Management in Atlantic and Indian Ocean SIDS funded by the GEF, implemented by the UNEP / UNDP, working with the PUC ("IWRM").
- African Development Bank (ADB) / International Fund for Agricultural Development (IFAD) investment programme to improve irrigation infrastructure, working with the Seychelles Agricultural Agency ("Irrigation").

It was recognised that there was the potential for duplication of activities across these projects / programmes. For example, data and information requests to various GoS ministries and agencies. However, there were also opportunities for lesson learning, synergies and exchanges between these projects, as well as sharing of results and outcomes of interest that could bring additional value to each project and as a whole for the water sector.

To support improved coordination of donor-supported water sector projects / programmes in the Seychelles, REPSWS arranged an initial workshop as a forum to exchange on the overall objectives, expected results and activities / plan of each project. This allowed the identification of complementary areas, sharing of tasks and activities and / or opportunities for exchange and lesson learning.

Representatives from each project / programme attended this first meeting, with the meeting chaired by the GoS. One of the main outcomes from the meeting was a mapping exercise, which is presented in Table 1.

Table 1: Water sector coordination project and programme mapping exercise outcomes

UNDP "Ecosystem"	**BADEA "Floods"**	**GEF IWRM**	**ADB / IFAD "Irrigation"**	**EIB REPSWS**
Barrages (new & rehabilitation) - for pilot areas	Inventory for potential sites for dams	New river sources mapping	New river sources / barrage / reservoir	New river sources / barrage / reservoir
Saline intrusion (Anse Royale)			Saline intrusion	
Policy formulation for watersheds		Policy formulation for watersheds		River Committee
Local committees and Water User Associations (WUA)			Local committees and WUA	Local committees and WUA
Legislation, regulations, standards, guidelines		Legislation, regulations, standards, guidelines		Legislation, regulations, standards, guidelines
Governance structures / institutional arrangements	Governance structures / institutional arrangements	Governance structures / institutional arrangements	Governance structures / institutional arrangements	Governance structures / institutional arrangements
	Review of historical & recent hydrometric data			Review of historical & recent hydrometric data
	Data management & quality assurance			Data management & quality assurance
	Climate change			Climate change

UNDP "Ecosystem"	BADEA "Floods"	GEF IWRM	ADB / IFAD "Irrigation"	EIB REPSWS
		Rainwater harvesting		Rainwater harvesting
Invasive species		Invasive species		Invasive species
Wetland restoration / rehabilitation		Wetland restoration / rehabilitation		
			Barrage rehabilitation	

Following the initial workshop, two further meetings were held; one with a technical focus, the second with an emphasis on water sector policy. At this meeting, a representative from the NMS stated their interest in developing a memorandum of understanding (MoU) with the PUC regarding the operation and maintenance of meteorological stations to be installed and commissioned by REPSWS. This opportunity for appropriate investment and capacity development in collaboration across government entities is explored in more detail later in this paper.

At the first policy group coordination meeting, draft copies of a number of information sheets related to demand management measures were shared with the attendees, for their later written response and comment.

Although progress was made through these coordination meetings, especially on the airing of issues and needs on water sector policy and reform, less progress was made regarding more technical issues.

One clear lesson to learn from this experience is the importance of the presence of a senior representative from the GoS to take discussions forward and to progress issues raised at the meetings to senior political levels in the GoS. This is important to ensure that the linkages that exist between the policy / institutional and technical strands are maintained, and that developments in one strand support and are supported by the other. Thus, it was recommended that a more formal structure was put in place, such as a *water sector working group*, that could be hosted within the appropriate GoS ministry, and chaired at the permanent secretary level. This group would have an overarching objective to regularise and formalise coordination of donor-led project and programmes, with representation from the key donor bodies either funding or implementing projects or programmes in the water and related sectors.

Seeking to Maximise Opportunities through a Bilateral Approach

In parallel with the promotion of a sector wide approach to coordination in the water sector, REPSWS also sought to maximise complementary benefits with related programmes and projects by also adopting a bilateral approach to cooperation.

A key example of this was the development of a MoU with the Resource Efficient Technologies (RET) programme (Full title: *Promotion and Up-scaling of Climate-resilient, Resource Efficient Technologies in a Tropical Island Context*). This programme is funded the GEF Trust Fund and implemented by the UNDP. It aims to significantly reduce the rate of electricity consumption and water usage in Seychelles among underserved communities in the residential sector. It was agreed with the EIB and the PUC that through this MoU the RET would support delivery of the Water Demand Management (WDM) implementation plan of REPSWS.

This was considered to be an appropriate approach to take with respect to the balance of deliverables between the REPSWS and RET and delivering the foreseen WDM programme, and in doing so, avoid significant duplication of effort and resources. The RET project was preparing the evidence-base towards implementing a plan for the uptake of rainwater harvesting and water-efficient technologies, which could include designing and installing rainwater harvesting and water-efficient technologies, as appropriate. The RET project was also in discussion with the Seychelles Institute of Technology (SIT) to develop a training programme for the design, installation and maintenance of rainwater harvesting and water-efficient technologies.

Further, the RET project undertook baseline surveys, social assessments, fixtures and fitting surveys to help deliver the required evidence-base for the WDM implementation plan. Pilot studies were planned and implemented by the RET project to demonstrate the efficacy, payback period, risks, best practice and appropriate technology with regards to water-efficient and rainwater harvesting technologies.

The RET project were also engaging with stakeholders, principally the Ministry of Land Use and Housing, to promote water-efficient technologies, rainwater harvesting and water storage through revised building regulations (by-laws).

REPSWS supported the RET project with advice and information, and prepared a number of technical notes (e.g. rainwater harvesting, greywater re-use) for use by the RET project.

Information from the RET project was also used to help shape the national campaign on water management in Seychelles delivered by REPSWS. Firstly, results from the customer awareness survey were used to help shape the documentaries and advertising spots prepared around water-efficient technologies and conservation. Secondly, information from the market survey for water-efficient technologies and water conservation technologies was used in the information booklet prepared for the tourism sector. Finally, the household fixtures and fittings survey was used to help target information in the documentaries and advertising spots being developed for the national campaign.

Information from the RET surveys was also used to update the baseline water demand forecasts developed for Mahé, Praslin and La Digue. The updated baseline water demand forecasts were used together with different demand management scenarios (low, medium and high) and the water resources planning models to

establish supply-demand balance deficits and the locations and required storage volumes needed to meet the deficits across the islands of Praslin and La Digue.

Delivering Sustainable Capacity Development through Institutional Collaboration

REPSWS also proactively sought collaboration and capacity development opportunities with other state institutions. For example, REPSWS facilitated a MoU between the NMS and PUC regarding the future operation of new REPSWS funded meteorological stations. The NMS were fully engaged in all aspects of the siting and specification of these instruments, and were in receipt of appropriate training. This aligned the REPSWS investment to where it would deliver maximum returns to the Seychelles science base and into later policy development.

The REPSWS scope included the installation of new meteorological equipment and instrumentation at up to six locations across upper elevations on Mahé (see Figure 2). This objective was explained to representatives of the NMS during initial bilateral meetings with REPSWS. As noted earlier, the NMS formally confirmed their interest in the preparation of a MoU with the PUC to support this installation, but that then once successfully commissioned, to take responsibility for the ongoing operation and maintenance of these locations, and sharing of collected data with the PUC.

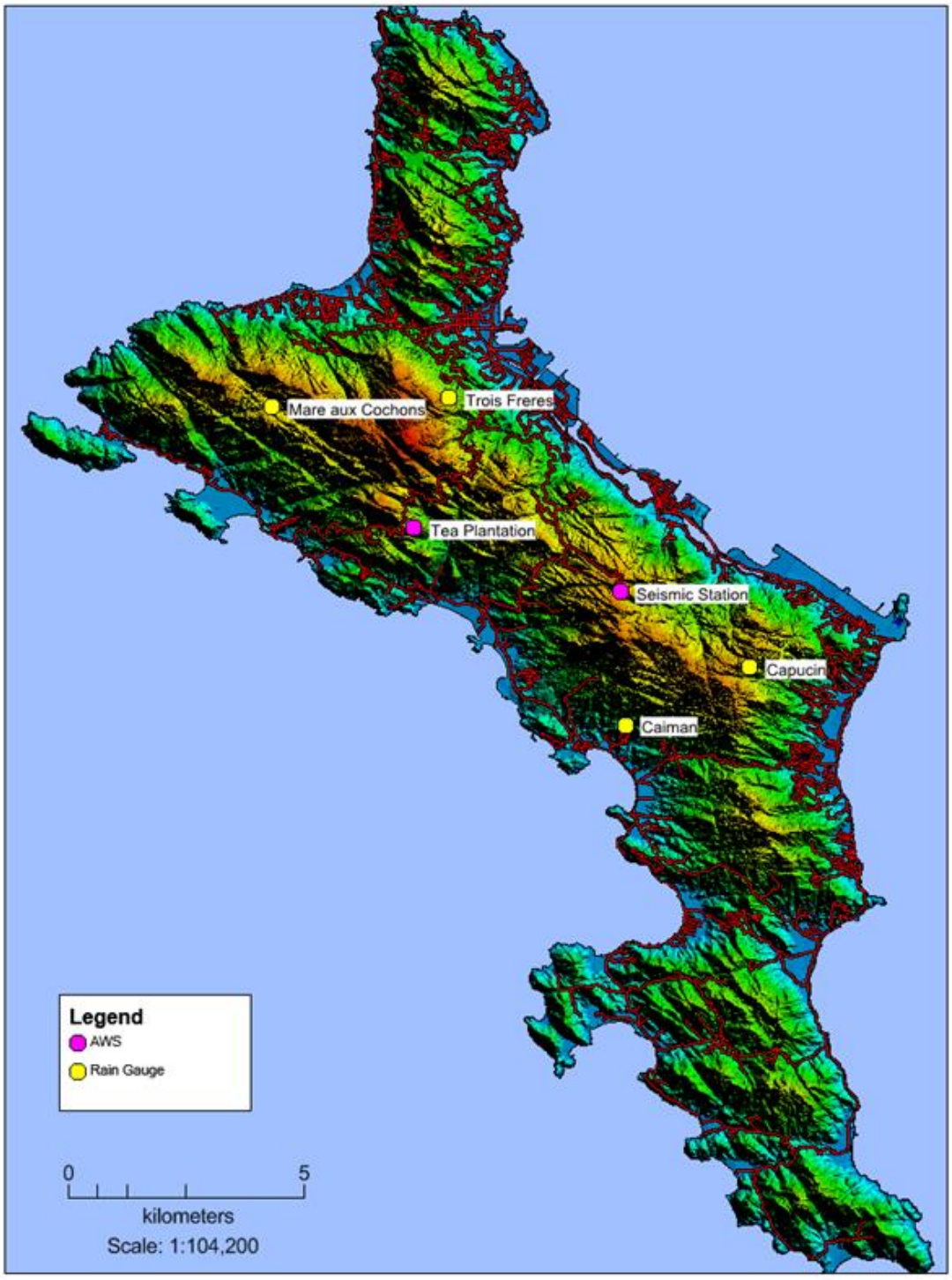
As the NMS already operated a network of meteorological stations across Mahé (and the other islands of Seychelles), and therefore had existing infrastructure, technical and human resources, hardware and software for data collection transfer and processing, the development of this joint working approach was accepted as being beneficial to decision makers across Seychelles as a whole.

The PUC would also specifically benefit, given that the MoU confirmed that the NMS would be responsible for the timely sharing of collected datasets with the PUC. This would therefore support the PUC to better understand climate patterns across Mahé to make enhanced decisions around water resources management and planning.

Conclusions and Recommendations

The REPSWS has successfully adopted a range of approaches to maximize capacity development benefits delivered by the programme. This included meeting its needs with respect to the adoption and use of an appropriate water resources modelling platform to support delivery of its particular technical objectives. A software platform was selected that delivered on these technical requirements, but from a perspective of ongoing sustainable use with respect to licence fees, vendor-led training and user community support, as well as adoption of a “learning by doing” approach to training.

Figure 2: Locations of REPSWS funded new Automatic Weather Stations and Rain Gauges on Mahé



A collaborative approach was initiated by REPSWS across donor funded water sector projects and programmes that delivered relatively modest successes, but did provide a mechanism for bilateral relationships to be developed with related initiatives. Working with the RET programme in a collaborative manner resulted in significant benefits through coordination between the two programmes. This included

the removal of the potential duplication of effort around exploring implementation of water and energy efficiency measures in Seychelles.

The experiences from the REPSWS with respect to cross sectoral coordination highlighted the importance of active and appropriate levels of leadership by the GoS to sustain such an approach. With this leadership and support, some of the initial benefits realized in the outcomes described here would be expected to develop and grow into the future.

In addition to this, a collaborative working approach that the REPSWS facilitated between the PUC and NMS yielded significant benefits with respect to climate monitoring for Seychelles. This approach ensured that each organisation was appropriately engaged in the installation of the REPSWS funded new meteorological and rain gauge stations, which maximized future benefits to accrue from the investment that this newly installed equipment presented.

The successes presented here demonstrate that adopting an outcome focused, collaborative and adaptable approach delivers benefits that can extend beyond the immediate technical and institutional scope of a project or programme. Additionally, seeking mutual benefit through the understanding of shared objectives in a collaborative manner, can result in benefits for all those concerned. Programme design should recognize this and seek to move away from a process based approach to capacity building and adopt an outcome focused approach that takes a wider and longer term perspective to capacity development. This needs to be centred on the most appropriate institutions and individuals, strengthening the science –technology base to support future policy development.

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