



United Nations Educational, Scientific and Cultural Organization
UNESCO Office for the Pacific States

Re-engaging UNESCO International Hydrological Programme in Pacific Island SIDS

Methodology and Workplan

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Terms of reference

Through its International Hydrological Programme, and in partnership with key regional and international partners, UNESCO aims to increase its support to Pacific SIDS to achieve SDG6. UNESCO plans to scope needs and priorities for addressing water challenges in the Pacific region and map on-going activities by a wide range of partners and stakeholders with the aim of identifying targeted areas in which UNESCO's water initiatives and technical expertise could most effectively support Pacific SIDS. The scoping exercise will support the development of a work plan and resource mobilization strategy

The terms of reference for this work are:

- Carry out research, surveys and interviews to identify key water needs and priorities for Pacific SIDS;
- Propose targeted ways in which IHP and other UNESCO water initiatives could address those needs and challenges;
- Develop a concrete and actionable work plan for IHP activities in the Pacific SIDS;
- Develop a funding proposal and identify potential donors

The work would require on-line or remote consultation with:

- Relevant regional and national documents and policies related to freshwater management, governance, security and other areas that fall within IHP's remit
- Officials of relevant government ministries and departments in Pacific Island Countries, technical experts, development partners and stakeholders, including the IHP Regional Steering Committee (RSC) for Southeast Asia and the Pacific and the Pacific Community (SPC)
- Potential donors
- Other UN Bodies and bilateral donors/ cooperation agencies

The following deliverables are required:

1. To be delivered on or before 30 June:
 - A methodology and work plan, including a list of key organisations and individuals to be consulted
2. To be delivered on or before 18 August:
 - Initial mapping, survey and consultation results describing the current capacities, expressed needs in water resources management for the Pacific SIDS, and on-going activities (including a folder with all related survey and research documents).
 - An initial mapping of the donors' presence and activities being financed (including contact details etc.)
 - A draft work plan and
 - A draft resource mobilization strategy
3. To be delivered on or before 30 September:
 - Final versions of all documents to be drafted in item 2 above of the deliverables
 - A draft funding proposal based on the above

E. Timeframe:

This assignment is estimated to be for approximately 50 working days, or as required to complete the work. The expected start date of the contract is 1 June 2017 and the end date is 30 September.

In consultation with the UNESCO Office for the Pacific States, a workplan will be prepared within the first three weeks.

Summary

This report sets out preliminary work on reviewing the situation and needs in water and sanitation in the very diverse and geographically dispersed Pacific island countries (PICS). It also briefly examines the character of UNESCO IHP, its relation to the UN's 2030 Sustainable Development Goal for water and sanitation and its past contributions to small island water resources and their management. It looks in a preliminary way at the challenges in re-engaging a large multi-national organisation with diverse small island countries. It draws some lessons from the EU's recent Pacific-European Science, Technology and Innovation Project, PACE-NET Plus. It then sets out the planned methodology for achieving the goals of this work. It also notes that the action plan required for this work and the funding proposal are best developed if re-engagement is a key aim, by a participatory process involving the stakeholders. This is not possible within the current project. A timetable is also given for this work and lists of organisations that are planned to be researched and contacted.

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1. Introduction

The Barbados Conference on the Sustainable Development of Small Island States in 1994 (UNDESA, 1994) helped raise awareness of their fragility and vulnerability. This vulnerability arises from their remoteness, small land area, rapid population growth, limited capacity and land resources and sensitivity to climate variability (Talu et al., 1979). Low Gross Domestic Product, limited trading opportunities, urbanisation and rapid growth have strained traditional support mechanisms (Ward, 1999) and customary approaches to hazard risk reduction.

The outcome statement of the United Nations (UN) third International Conference on Small Island Developing States (SIDS statement) held in Samoa from 1-4 April 2014 reaffirmed the UN's commitment to the sustainable development of SIDS. Sustainable development the Pacific way, building resilient, self-reliant, and healthy communities, is the key focus of the 2014 Pacific Framework for Regionalisation (PIFS, 2014). The SIDS statement recognised a need for a more integrated approach to sustainable development of island nations. It acknowledged that SIDS remain a special case for sustainable development due to their unique vulnerabilities and because they are constrained in meeting sustainable development goals (UNGA, 2014).

Development in SIDS has been affected adversely by the impacts of the global economic crisis, declining foreign direct investment, trade imbalances, increased indebtedness, lack of adequate transport, energy and information and communications technology infrastructure networks, limited human and institutional capacity and the inability to integrate effectively into the global economy. Growth has also been hindered by the impact of a suite of natural disasters, the high cost of imported energy and the degradation of coastal and marine ecosystems, freshwater resources and the threat of sea-level rise (UNGA, 2014).

1.1 Freshwater and sanitation in SIDS

Freshwater and sanitation were singled out by the SIDS statement which detailed numerous challenges in islands for this vital sector including: pollution; the overexploitation of surface, ground and coastal waters; saline intrusion; drought and water scarcity; soil erosion; inadequate water and wastewater treatment; and the lack of access to sanitation and hygiene. In addition, projected changes in rainfall patterns related to climate change may have regionally varying and potentially significant impacts on water supply (UNGA, 2014).

The priority tasks identified in the water and sanitation sector by the SIDS statement are to develop institutional and human capacities for sustainable, integrated management of water resources and related ecosystem; provide and operate appropriate facilities and infrastructure for safe drinking water, sanitation, hygiene and waste management systems; facilitate the expansion of wastewater treatment, recycling and reuse; improve water-use efficiency; work towards eliminating over-extraction, especially of groundwater; and mitigate the effects of saltwater intrusion (UNGA, 2014).

1.2 Risks to water security in SIDS

Most international agencies consider climate-change as the greatest risk to water security faced by SIDS. While climate change, and particularly sea-level rise is a major long-term risk, there are more pressing short-term risks. A study in 2011 compared the risks to water security in 15 very diverse SIDS from climate change and non-climate factors out to the year 2030. It found that poor water governance and management, particularly evident during droughts, were among the most significant risks (Falkland, 2011). Amongst the issues identified were failure to legally protect and conserve water sources, reluctance to implement policy and enact water legislation and regulations, over-extraction, excessive unaccounted for water losses, inadequate tariffs, absence of demand management, lack of capacity, lack of monitoring, poor community engagement, absence of sector priorities, defined responsibilities and goals, as well as general planning failures. While SIDS are incredibly diverse geographically, climatically, culturally and socially there are some common challenges.

Duncan (2011) has also examined the threats to freshwater resources due to environmental change in 7 selected islands out of about 853, assumed representative of 14 Pacific island countries (PICS), using a vulnerability index approach which considered resource stresses, development pressures, ecological

insecurities, and management challenges. Duncan also stressed the diversity of contexts in PICS. He found that water resources management provides the greatest challenge regionally, across nearly all islands, with the other significant challenge being the delivery of the fundamental human needs of improved drinking water and sanitation. He concluded that the 7 islands studied fell into three broad groups:

- Low-lying islands which are under severe resource and environmental stress, with significant development pressure and a need for improved water management and governance,
- Larger volcanic islands with adequate water resources, but significant to severe water management and governance challenges in managing available resources provision of drinking water and sanitation,
- Moderate-sized volcanic islands with adequate water resources, significant water management and governance challenges in managing the available resources, but a reasonably high-level of provision of improved drinking water and sanitation.

The study noted, as did Falkland (2011), that the limited availability of data across the region hinders assessment and planning. The report saw that the greatest challenge facing PICs in water resource management is limited technical and governance capacity. There is minimal capacity within countries to respond to the day-to-day vulnerability threats, let alone the frequent natural disasters which sweep the region. It concluded that the broad lack of enabling national policies and legislation, and the lack of capacity to implement existing strategies must be tackled to reduce regional, national and island freshwater vulnerability

Major aid and donor projects throughout the region over four decades have attempted to address vulnerability of water resources and reduce risk to water supplies. Their success has been variable and limited. A key factor has been that most have focussed on single issues, such as infrastructure, have not been integrated, have failed to recognise the unique contexts of PICTs and have not built on the strengths of local communities. In addition, the customs and rights of subsistence living are not matched to the demands of the highly urbanised island environments in population centres in PICTs experienced in many PICTs in their transition to developed economies (Jones, 1997; White et al., 1999).

1.3 The Pacific Regional Action Plan on Sustainable Water Management

The 2003 Pacific Regional Action Plan (RAP) on Sustainable Water Management (SOPAC and ADB, 2003). was developed after impressive, wide-ranging, multi-stakeholder, national consultations held throughout the region. The RAP, endorsed by all 17 member countries in 2003, identified priority actions under six themes:

- I. Water Resources Management;
- II. Island Vulnerability;
- III. Awareness;
- IV. Technology;
- V. Institutional Arrangements; and
- VI. Finance.

It outlined the needs of the water and sanitation sector to cope with current and future pressures on often limited water resources caused by increasing populations, development, non-climate hazards, as well as climate variability and climate change.

Actions identified in the RAP focussed on using integrated water resource management to:

- improve the knowledge base;
- identify appropriate water extraction and treatment technologies;
- increase capacity;
- introduce risk assessment and management;
- engage communities in co-management at all levels;
- disseminate information;
- improve water governance;
- promote regional cooperation;
- reduce water demand, wastage and unaccounted losses;
- protect water sources; and

- ensure water supply and sanitation systems are sustainable.

Although developed over 14 years ago many of these actions remain as relevant today within most member states as they were in 2003.

1.4 The Pacific Framework for Action on Drinking Water Quality and Health

In parallel with the RAP, Ministers of Health for the Pacific Island Countries called upon Member States, national, regional and international partners to strengthen national drinking water quality standards and monitoring capabilities. The World Health Organisation (WHO) Workshop on Drinking Water Quality Standards and Monitoring in Pacific Island Countries (Nadi, Fiji; 7-10 Feb. 2005) developed the Pacific Framework for Action on Drinking Water Quality and Health (WHO, 2005). The Framework was designed to support the implementation of drinking water quality actions envisioned in the overarching RAP. It provided 21 recommendations under the 6 RAP themes:

1. Protection of water sources such as springs, rivers, groundwater and rainwater catchments from contamination and overuse must be a priority to ensure quality.
2. Technical support should be provided to develop national drinking water quality standards that are dynamic and implemented in stages as necessary.
3. The use of Water Safety Plans should be encouraged in the Region, and countries should be supported with manuals, guidelines and training on the use and implementation of this tool.
4. Effort should be expanded at regional and national level to assess risks posed by toxic chemicals and pathogens in drinking water.
5. Human resources should be developed for drinking water safety, including drinking water quality monitoring, data management and information systems.
6. Research should be promoted and supported, and the scientific knowledge base should be strengthened to support the development of effective, efficient, and equitable policies and plans related to drinking water quality and health.
7. Emergency preparedness plans should adequately address drinking water quality issues, and water safety plans should address risks posed by potential emergencies.
8. The fragile environments of very small islands and their role in managing source water quality and quantity should be respected and protected.
9. Human resources should be developed to strengthen countries capacities for raising community awareness related to water quality and health risks, source water protection, household-level water treatment and safe storage.
10. Community awareness and community-based action programmes on safe water supply and sanitation should be developed and expanded in rural and remote areas and in urban areas alike.
11. Community-based water quality testing and source protection programmes should be supported in rural and remote areas as well as in urban areas.
12. Government awareness should be raised and political commitment should be strengthened to support actions for safe water supply and sanitation.
13. Technical assistance and training should be provided for strengthening drinking water quality management, including monitoring, operation, calibration and maintenance of any related equipment.
14. Adequate equipment for drinking water quality management should be provided.
15. Research should be supported to develop appropriate field-test kits for use in remote and rural areas.
16. Adequate equipment for water and wastewater treatment should be provided.
17. Rainwater harvesting programmes should be supported by improving water quality through approaches such as “first-flush” devices and community-based water quality testing.
18. National and regional partnerships should be built to develop standards and guidelines and legislation in order to ensure provision of safe drinking water, and to establish national water quality committees that could oversee development of water safety plans.
19. Communication and information exchange between agencies involved with water quality data collection should be strengthened. This should include exchange and joint analysis of drinking water quality data and disease surveillance data between water supply agencies and health authorities.

20. Governments should, as a priority, develop and implement appropriate financial mechanisms to support sustained supplies of safe drinking water and sanitation services to both rural and urban communities to fulfil the MDG targets.
21. External agencies should be encouraged to support specific activities in the region where governments are unable to sustain provision of safe drinking water and sanitation services.

These recommendations on drinking water quality reflect both the historic extent of the problems faced in the region and the level of concern over water quality. Many of these concerns remain.

1.5 UNESCO IHP¹

UNESCO has 195 member countries and 10 associate members. UNESCO's International Hydrological Programme (IHP) is the only intergovernmental programme of the UN system devoted to water research, water resources management, and education and capacity building. Since its inception in 1975, IHP has evolved from an internationally coordinated hydrological research programme into an encompassing, holistic programme to facilitate education and capacity building, and enhance water resources management and governance.

The planning, definition of priorities, and supervision of IHP are the responsibility of IHP's by the Intergovernmental Council. The Council is composed of 36 UNESCO Member States elected by the General Conference of UNESCO at its ordinary sessions held every two years. Equitable geographical distribution and appropriate rotation of the representatives of the Member States are aimed for in the composition of the Council. Each of UNESCO's six electoral regions elects Member States for membership in the Council. Region IV, Asia and Pacific, contains 60% of the world's population, has 6 of the world's 10 largest cities, covers more than 40% of the global land area, including the Pacific Ocean which is a diver of much of the world's climate and ocean circulation, and is incredibly diverse, containing the world's most populated and least populated countries.

IHP facilitates an interdisciplinary and integrated approach to watershed and aquifer management, which incorporates the social dimension of water resources, and promotes and develops international research in hydrological and freshwater sciences. Since 1975, IHP has been implemented in six-year programmatic time intervals or phases. It is currently in its eighth phase being implemented during the period 2014-2021.

In framing the UN's 2030 Sustainable Development, Goals, UNESCO IHP was a key actor in ensuring that there was a separate goal devoted to water and sanitation, Goal 6: *Ensure availability and sustainable management of water and sanitation for all.*

1.6 IHP and water security

The theme of IHP's eight phase is "Water Security: Responses to Local, Regional, and Global Challenges". To define priorities for IHP-VIII, a series of consultations took place with UNESCO Member States to identify regional needs and priorities for hydrological research, water resource management and education. Many Member States participated in the process and pointed to water related disasters, climate/hydrological variability, water scarcity, water quality and IWRM as being particularly important areas for attaining water security where hydrological research, water resource management and education are critically needed.

Input from most Member States indicated that IWRM is an important cross-cutting area in research, water management and education. The need for considering integrated coastal zone and land hydrological management in a climate change context were also raised by some member states. In relation to global hydrology, IHP was urged to work for the maintenance of long-term hydrological and ecosystem monitor networks, and to advance the use of remote sensing techniques. Several member states considered it important to promote the IWRM approach and to include in this approach socio-economic, legal and environmental aspects to qualify impacts that arise from global changes such as population growth and urbanization. Member States specifically stressed the need for research in social, behavioural, and economic sciences to provide the understanding and tools for participatory governance in facing the different challenges.

¹ <http://en.unesco.org/themes/water-security/hydrology>

Based on the priorities and needs of Member States, the eighth phase of the International Hydrological Programme (IHP-VIII) focuses on six thematic areas to assist Member States in their challenging endeavour to better manage and secure water and to ensure the necessary human and institutional capacities. These are:

- Theme 1: Water-related Disasters and Hydrological Changes
- Theme 2: Groundwater in a Changing Environment
- Theme 3: Addressing Water Scarcity and Quality
- Theme 4: Water and Human Settlements of the Future
- Theme 5: Ecohydrology, Engineering Harmony for a Sustainable World
- Theme 6: Water Education, Key to Water Security

The strategic plan of phase VIII focuses on:

- mobilizing international cooperation to improve knowledge and innovation to address water security challenges,
- strengthening the science-policy interface to reach water security at local, national, regional, and global levels and
- on developing institutional and human capacities for water security and sustainability.

The role of human behaviour, cultural beliefs and attitudes to water, and socio-economic research to better understand and develop tools to adapt to changing water availability will also be addressed.

These themes and their foci are consistent with the eight target areas of SDG 6: by 2030:

- 6.1 achieve universal and equitable access to safe and affordable drinking water for all
- 6.2 achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations
- 6.3 improve water quality by reducing pollution, eliminating dumping and minimising release of hazardous chemicals and materials, halving the proportion of untreated wastewater, and increasing recycling and safe reuse
- 6.4 substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity, and substantially reduce the number of people suffering from water scarcity
- 6.5 implement integrated water resources management at all levels, including through transboundary cooperation as appropriate
- 6.6 protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes
- 6.7 expand international cooperation and capacity-building support to developing countries in water and sanitation related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies
- 6.8 support and strengthen the participation of local communities for improving water and sanitation management

1.7 Previous work by IHP in SIDS

Members of IHP in the Pacific have had long involvement in water and sanitation in SIDS which culminated in an IHP Publication in 1991 on "Hydrology and water resources of small islands, a practical guide. Studies and reports on hydrology" (UNESCO, 1991). In 1992, as part of the Humid Tropics Programme under Phase V of IHP, a meeting was convened of participants throughout the Pacific and Indian Oceans to identify priority issues in water and sanitation (UNESCO, 1993). Out of that meeting, three very modest pilot research projects were proposed: one on the impact of sanitation on island groundwater in Tonga; one on the impact of forestry practices on near shore environments in Solomon Islands and one on groundwater recharge in atolls. The project on forestry practices was later abandoned but the other two were successfully completed and

are presented in UNESCO (2002). These projects have led to a long engagement by Pacific Island water practitioners and Australian and New Zealand hydrologists and water resources people in a wide range of water and sanitation projects including the development of national water policy and plans. Despite the local engagement of IHP committees in this work, at the international level IHP attention moved from SIDS to other pressing problems.

1.8 Linking IHP and SIDS

It is apparent that many of the priority tasks and risks to water security that have been identified in SIDS coincide with most of the themes of IHP phase VIII and the SDG 6 targets so a natural linkage would seem almost automatic. The problem that occurs is the problem of scale. IHP is an international organisation composed of 195 incredibly diverse member states some with extremely large populations, enormous resources and very well-trained personnel in the water and sanitation sector. In the very dispersed Pacific SIDS, population numbers are generally small, resources limited and the number of trained personnel in the water and sanitation are few. In addition, the urgency of the problems they face daily mean that strategic issues tend to be of lower priority.

1.9 Lessons from PACE-NET

The problem of interfacing large agencies with small Pacific organisations was an issue in the recently completed EU's PACE-NET Plus² project which followed on from the earlier PACE-NET project, a 6-year engagement, to develop a Pacific-Europe Network on science, technology and innovation between European and Pacific Island organisations. At first, as one participant observed, it was like trying to refuel a canoe from a super-tanker. As time progressed, progress evolved and significant success were achieved.

PACE-Net Plus aimed to unite 16 partners in the Pacific and the EU to strengthen research cooperation between the two regions. To reach this objective of a better, stronger cooperation in science, technology and innovation, the philosophy was to increase research capacity, management and dialogue, to allow the appropriation of science by the countries of the region. One of the ideas was to make information available to the Pacific states to help them to form opinions, founded on scientific evidence, and for Europe to better know the opportunities in Pacific research.

Some of the key lessons emerging from PACE-NET Plus were:

- The importance of long-term engagement to develop mutual trust and respect;
- The importance of dialogue in reaching shared goals;
- The importance of listening to and recognising Pacific priorities;
- The uniqueness, complexity and diversity in widely dispersed Pacific SIDS;
- The value placed by Pacific island people in capacity building and education;
- The fundamental importance of culture in Pacific SIDS; and
- Recognition of the strengths and resilience of Pacific island peoples.

One of the challenges faced in re-engaging IHP with Pacific SIDS is to ensure that this re-engagement adds value to already existing efforts in the Pacific.

2. Aims of this Work

The terms of reference for this work identify the aims as (see page 2):

1. Carry out research, surveys and interviews to identify key water needs and priorities for Pacific SIDS;
2. Propose targeted ways in which IHP and other UNESCO water initiatives could address those needs and challenges;
3. Develop a concrete and actionable work plan for IHP activities in the Pacific SIDS;
4. Develop a funding proposal and identify potential donors

² <http://plus.pacenet.eu.s3-website-eu-west-1.amazonaws.com/>

The work is envisaged to require on-line or remote consultation with:

- Relevant regional and national documents and policies related to freshwater management, governance, security and other areas that fall within IHP's remit
- Officials of relevant government ministries and departments in Pacific Island Countries, technical experts, development partners and stakeholders, including the IHP Regional Steering Committee (RSC) for Southeast Asia and the Pacific and the Pacific Community (SPC)
- Potential donors
- Other UN Bodies and bilateral donors/ cooperation agencies.

There may be some difficulties with on-line and remote consultation with key agencies in SIDS. The first is that Pacific peoples greatly value face-to-face discussions and, secondly, the second is that the time pressures on the limited number of individuals and communication difficulties often mean that on-line enquiries are often unanswered.

3. Methodology

3.1 Identify key water needs and priorities for Pacific SIDS

The first step in identifying needs and priorities for Pacific SIDS will be to review the recent literature, reports, plans and policies of SIDS. Some of the earlier identified priorities have already been identified in Section 1 above and the review will build on and update these.

The second step will be to discuss these with the key Council of Regional Organisations in the Pacific (CROP) agencies with responsibility in water, sanitation, climate, natural disasters and the environment:

- the Secretariat of the Pacific Community (SPC)
- the South Pacific Regional Environment Program (SPREP)
- the University of the South Pacific (USP)

In addition, the Pacific Water and Wastewater Association (PWWA) which is a Pacific regional organisation traditionally focused on Pacific water service providers and supplier members, will be contacted. PWWA's coverage extends to the island states covered by the Pacific Islands Forum and their Pacific neighbouring states.

The discussions with these agencies will also seek to identify areas where UNESCO can add value to or supplement existing programmes within the region.

The third step will be to discuss with water agencies in selected individual countries their identified needs and priorities and to seek common themes.

The fourth step will be to find out the priorities and needs identified by the principal donors in the Pacific, Australian DFAT, New Zealand MFAT, EU Pacific, World Bank and Asian Development Bank, ADB as well as the Pacific Regional Infrastructure Fund (PRIF) a multi-agency coordination mechanism aimed at improving the delivery of development assistance from donors and development partners to the infrastructure sector in the Pacific region. PRIF supports infrastructure development and maintenance in Pacific Island Countries through investment coordination, research and technical assistance. The PRIF includes, ADB, Australian Aid, European Union, JICA, New Zealand Aid and the World Bank Group as members,

The inputs from all the above will be reviewed, collated and summarised.

3.2 Targeted ways in which IHP and other UNESCO water initiatives could address those needs and challenges

This objective will be addressed by identifying the key strengths and priorities of IHP and other water initiatives which address the needs and challenges in PICS. An already identified priority area is capacity building and community awareness raising where IHP has demonstrated expertise. Also, included in this identification will be agencies with strengths in disaster risk reduction and climate change which will include other UN Water agencies such as WMO, WHO, UNICEF, UNDP and UNEP.

As a first step a rapid computer search of web sites will be carried out to identify key strengths. Follow up interviews with personnel at IHP headquarters and regional offices in Jakarta and Apia as well as Asia-Pacific Regional Category II water Centres will be undertaken.

A critical consideration here is that these UNESCO initiatives not impose external priorities on PICS but address their identified needs and challenges, most preferably working in partnership with

Specific areas in which UNESCO as unique opportunities to address the needs of PICS will be detailed.

3.3 Develop a concrete and actionable work plan for IHP activities in the Pacific SIDS

This objective is problematic since concrete and actionable work plans are best developed in an interactive, collaborative process. Robert Ackoff (1999), the founder of operations research identified the separate phases of interactive planning as summarised in Table 1.

Table 1 The five phases of interactive planning. Adapted from Ackoff (1999)

Phase	Objective	Components	Principal Outputs
I. Formulation of the Issues	Determine issues, problems and opportunities	Previous actions and plans, recognised issues, problems, opportunities, and their interactions; constraints to effective management	Issues to be addressed by plans
II. Ends Planning	Determine where you want to be and the gaps between that and now	Extract vision, principles, goals, and objectives to achieve the desired ends.	Principles, goals and objectives
III. Means Planning	Choosing mechanisms to achieve goals and objectives	Develop and select actions for achieving goals and objectives and indicators for completion of actions	Implementation Plan Actions
IV. Resource Planning	Determine resources required for planned actions	Define resource needs and identify if resources are available or how they will be generated or acquired	Implementation Plan resources needs
V. Implementation and Control	Determine responsibilities and schedules for implementation	Identify who is responsible for actions, when they are to be implemented and how implementation is to be monitored	Implementation Plan Schedule and Responsibilities for implementation. Operations Plans

In Ackoff's process, plans cannot be handed down from the mountain *ex cathedra*. They must involve the interaction of stakeholders in the development and articulation.

It is envisaged that the actionable concrete plan envisaged in this objective would be best developed in workshops involving UNESCO and the key stakeholders in PICS. Pacific peoples appreciate this sort of inclusive process While a plan can be produced in this work, its ownership may be very limited.

3.4 Develop a funding proposal and identify potential donors

Because of the non-inclusive process designed for the Work Plan, basing a funding proposal on it may also be problematic. To be successful, the funding proposal would need support from key agencies and countries within the region and to add value to the many diverse programs, particularly development programs, already underway.

Sustainable development the Pacific way, building resilient, self-reliant, and healthy communities, is the key focus of the 2014 Pacific Framework for Regionalisation (PIFS, 2014) developed by the Pacific Forum and agreed to be all member countries. Almost all PICS have national sustainable development strategies which in many form the basis for the allocation of government resources and for aid funding. The SIDS statement recognised a need for a more integrated approach to sustainable development of island nations. It acknowledged that SIDS remain a special case for sustainable development due to their unique vulnerabilities and because they are constrained in meeting sustainable development goals (UNGA, 2014). It would seem

then that a funding proposal based on the contribution that water and sanitation make to sustainable development, to climate resilience, to population health and to disaster risk reduction would add value to the aspirations of PICS and donors within the region.

Because of the unique challenges faced by atoll island countries, one suggestion proposed recently by workers in the Pacific and Indian Ocean, was the establishment of an Atoll Island Water and Sanitation Research Institute, coupled with committed political leadership, could have highly significant benefits for providing practical options for sustainable atoll island communities (White *et al.*, 2015). Perhaps UNESCO could consider a multi-regional Atoll Island Category II water centre?

4. Work Plan

- 15 June 2017 – Sign Contract
- 15 -27 June 2017 – Review literature and reports, web search preliminary contacts to arrange discussions. Prepare Report 1
- 28 June 2017 - Deliver Report 1
- 28 June -13 July 2017 -Pre-existing commitment
- 14 July – 31 July 2017 - Continue web search, Arrange discussions with UNESCO IHP, SPC, UNICEF, DFAT, PRIF, USP, MFAT
- 1 August -10 August -Continue interviews, discussion and web search
- 10 August – 18 August -Prepare and deliver Report 2
- 13 August-18 August -Possible attendance Pacific Meteorology Council in Honiara
- 20 August -1 September – Develop framework for plan for IHP activities
- 2 September – 30 September – Finalise plan, discuss with key stakeholders, prepare and deliver funding proposal and Report 3

5. Agencies to be Contacted

5.1 International

UNESCO IHP

UNESCO Regional Offices Jakarta, Apia

UNESCO Category II Centres and UNESCO Water Chairs Region IV

UNESCO Regional Steering Committee South East Asia-Pacific

UNESCO IHP Committees Australia, New Zealand, Japan

UNICEF Pacific

UNDP

UNEP

IHE Delft

WMO

WHO

GADRI

5.2 Donors

DFAT

MFAT

EU Pacific

WB

ADB

JICA

PRIF

5.3 Regional Organisations

SPC

SPREP

USP

East-West Centre Hawaii

5.4 Country Water, Environment, Disaster and Meteorological Agencies

PNG

Solomon Islands

Fiji

Vanuatu

Samoa

Tonga

Cook Islands

Kiribati

FSM

Marshall Islands

Nauru

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