



SOPAC



SOPAC/GEF/IWRM/RTAG.2/8
Date: 25th October 2010
Original: English

Second Meeting of the Regional Technical Advisory Group
for the SOPAC/UNDP/UNEP/GEF Project:
*“Implementing Sustainable Water Resource and Wastewater
Management in Pacific Island Countries”*

Nadi, Fiji, 25th – 26th October 2010

The Chairperson will invite Mr Christopher Paterson to present document SOPAC/GEF/IWRM/RTAG.2/8 “Regional IWRM Indicator Framework”. This presentation will outline the options for a Regional Indicator Framework for Integrated Water Resources Management (IWRM) and Water Use Efficiency (WUE), including potential IWRM and environmental stress indicators; how this framework can mainstream IWRM reporting within national reporting frameworks and how these can be combined to deliver a sustainable regional indicator framework to report nationally, regionally and inform global reporting.

ESTABLISHMENT OF A REGIONAL INDICATOR FRAMEWORK

1 Introduction

The logframe of the UNEP and UNDP Project Documents provides a suite of “*comprehensive baseline and target indicators and sources of verification for both outcome and output levels during project implementation*”. It was anticipated that these would “*form the basis on which the project’s Monitoring and Evaluation (M&E) system [would] be built*”. It was anticipated that the M&E program would be revised and finalised in the first six months of the project.

The deliverable of Component 2 of the UNEP and UNDP Project Document (‘ProDoc’) is the development of an IWRM and WUE Regional Indicator Framework with the objective of “*IWRM and environmental stress indicators developed and monitored through national and regional M&E systems to improve IWRM and WUE planning and programming and provide national and global environmental benefits*”. It is proposed in the ProDoc that the regional project indicator framework might evolve into the ongoing regional participatory M&E framework.

At the first RTAG meeting in Palau, the GEF IWRM environmental engineer was tasked with delivering a Draft Regional Indicator Framework by February 2011. This presentation will outline the options for a Regional Indicator Framework for Integrated Water Resources Management (IWRM) and Water Use Efficiency (WUE), including potential IWRM and environmental stress indicators; how this framework can mainstream IWRM reporting within national reporting frameworks and how these can be combined to deliver a sustainable regional indicator framework to report nationally, regionally and inform global reporting.

2 What is the point?

Managing water resources is a complex task, bringing together broadly ranging information, opinions, values relating to climatic, geographical, technical, environmental and human pressures and responses. Within this environment, it is critical to be able to answer a range of questions regarding our capacity to sustainably manage these resource whilst optimising opportunities.. These questions include:

- What are the issues?
- What are we doing about them?
- How well are we doing?
- Could we do better?

Indicators are generally developed to enable answers to these questions to be identified and communicated effectively. UNESCO¹ has suggested that making decisions without reliable indicators is like driving without road signs. More directly, indicators are able to provide key water resource information to guide and influence decision-makers. Millennium Development Goals for example are guiding investments of millions of dollars in drinking water and sanitation investment.

Importantly, much of the accessible comparable information that we have about a system is derived from some form of indicators.

3 Challenges

A range of problems and potential future requirements needs to be considered in developing a data set. These include:

- *Scale*: data sets are often poorly harmonised between disciplines and sectors involved in water resource management. Data sets are based on the needs of the department/sector for which they are collected with little consideration of linkages with other data sets.
- *Lack of co-ordination*: data is commonly collected within the constraints of the collecting organisation, without consideration of opportunities to collect complementary information that may add value to alternative data uses
- *Aggregation of data*: Data is often collected at the highest level that is useful (often as a cost saving measure); however collection of disaggregated data may provide a significant increase in the value of the data across sectors (e.g. financial data aggregated to 'agriculture' rather than sub-sector levels of 'subsistence' and 'commercial' or disaggregation of data based on gender)
- *Outdated / incomplete information*: Water resource and water use data sets are particularly challenging, where this data is often only collected for specific spatial and temporal needs (e.g. sustainable yield of an aquifer sub-unit on an island to meet the needs of a single community, rather than a island-level demand and resource assessment). Further, the capacity to integrate much older information, collected in hard-copy reports, into spatial databases is a resource challenge that may cause data to be lost
- *Poor uptake of current monitoring information*: the link between information and decision-making is not clearly understood or developed in the water sector, and even less across other sectors. The linkages between water supply and quality security and human and ecological health and development are not routinely recognised
- *Limited capacity to identify information needs and products*: Communication between resource managers, policy and decision-makers is often limited resulting in a lack of understanding of information needs for decision-making and limited capacity to produce it

4 Options for a Regional Indicator Framework

4.1 Types of Indicators

Two broad types of indicator frameworks are commonly adopted to present information on water resource management:

¹ UNESCO – Scope Policy Briefs, May 2006 – No.1

- Aggregated index: Multiple indicators are measured, often with supporting contextual indicators, and then aggregated into indices to represent collective progress. Typically the indicators aggregated are structured in a framework that covers the key aspects of the resources, either through a driver/pressure/state/impact/response (DPSIR) model or across the range of sectors or issues (e.g. household supply/development/disaster response/productivity/ecosystem health). The individual indicators are then aggregated through a process of comparative weighting – typically this involves normalising² and possibly weighting the results to reflect their importance. Ultimately a number is produced, which can then be compared with other results. Examples include the UNEP vulnerability index or the SOPAC environmental sustainability index (EVI).
- Headline indicators: Describes an approach where small core sets of indicators closely linked to policy priorities are used, recognising the difficulty and complexity of trying to reflect all aspects of system management in aggregated indicators. These indicators may be directly linked to the goal, such as the MDGs, or be a proxy for progress, such as use of an indicator species as a proxy for ecosystem health. These core indicators typically are intuitive, and therefore readily easier to understand than a complex index, and they help track progress (or lack of it) towards priorities. The challenge associated with headline indicators is establishing their link to water resource management objectives and gaining universal acceptance.

It is possible to combine these types of indicators and many aggregate or composite indices include headline indicators.

There are clear strengths and weaknesses of both models. The power of the MDGs in influencing policy and investment illustrates the capacity of well constructed headline indicators to influence communities and decision-makers alike. This success arises in part from the clarity of the indicator, as individuals can personally relate to most of the indicators (for example they all drink and use toilets). The MDGs are particularly powerful as they also relate directly to the management goals targeted and are relatively easy to measure (a critical factor in developing countries). However, it is not always possible to identify indicators with this combination of clarity, ease of measurement and relevance to policy goals.

Well constructed aggregated indices can provide considerable information about management progress. They also offer the ability to ‘unpack’ the indicators – to look at the sub-indicators making up the index to see which actions and pressures are most affecting the improvements (or otherwise). The indices can also include sub-indicators that are indicators of early change, possibly providing information on progress before more tangible headline indicators may. However, it can be difficult for communities and decision-makers to relate to indicators that have no tangible component. For this reason aggregated indicators are often then classified to provide more context to reported results. For example, to tell someone that the water quality is 0.53 may be somewhat confusing. However, to be able to state that it has improved from 0.37 (poor) to 0.53 (moderate) provides a slightly more tangible concept. To be able to state that we can now catch fish where we couldn’t before is likely to be far more tangible to the community (whilst possibly not containing the same level of management information).

4.2 Local, National, Regional, Global

The goal of monitoring once to satisfy all levels of reporting requirements has been an ongoing challenge for water resource managers. Critical to this approach is the recognition that management information needs may differ at different levels, to reflect the scale, pressures and environmental conditions at each level.

The core considerations of integrating monitoring programs vertically (local to global) include:

- Relevance – no one will be willing to commit resources to collecting and interpreting information that is not considered relevant. Headline indicators, such as MDGs for sanitation and drinking water access, are successful partly because they are relevant at the household level. This drives a willingness of communities to embrace the indicator. Notably these indicators have more relevance to the vulnerable communities and community members, which may present challenges where the community does not see their value. Aggregate indices are unlikely to be as engaging as headline indicators; however individual components that are relevant at a local

² Normalizing – establishing a common scale, normally from zero to one. This might be achieved by dividing the individual indicator value by the maximum value, or by classifying results into scales [e.g. low (0), moderate (0.5), high (1.0)] or many other mechanisms

level (such as water availability for farming) may form part of an aggregated index that has relevance at a catchment or national level.

The relevance of monitoring is linked to its perceived value. Decision-makers will rarely have a formal cost-benefit analysis to inform this decision. However, the value will typically be linked to the pressures associated with decisions (typically water resource information is perceived as far more valuable during drought and following floods) and the risks associated with making a mistake. The challenge to water resource managers is to get recognition for the value of monitoring outside these crises.

- Timing – reporting timeframes for indicators typically reflect the timeframes over which changes can be made by management decisions. Accordingly, household access to water is important on a daily basis, across a community this would be considered typically weekly to monthly and nationally (except in cases of national emergency) on a quarterly to annual basis. Timing will also significantly affect the value of monitoring information – if information is not available for reporting, its value and relevance is significantly diminished.
- Costs – clearly a crucial aspect of any indicator framework is the cost of implementing it. The decision to monitor indicators is often based on a cost-benefit assessment of the value of the information obtained and the costs of doing so. Accordingly, simple informative, cheap monitoring programmes are likely to be preferred over complex expensive programmes. Ultimately, decision-makers will only sanction monitoring that appears to provide clear benefits

In order to develop indicator programmes that can be integrated vertically, it is therefore crucial that the information needs and reporting cycles are reviewed for each level of management. Where possible, there may be significant value re-aligning the reporting cycles. Once this is achieved, reporting needs can be prioritised at each level and opportunities for integration, addressing information gaps and cost-sharing can be identified. Monitoring information required that is not a priority at a lower scale of reporting will need to be collected at a cost, either social (e.g. regulation) or financial. Information that is useful at multiple levels is a particularly valuable commodity and several stakeholders may be willing to share the costs.

4.3 Way forward

To inform the regional indicator framework, RTAG members will be tasked with:

- Identifying relevant national reporting requirements
- Identifying key national water management information needs
- Providing the PCU with direction on the types of indicator framework to be developed into a pilot for February approval

ANNEXE 1 – SAMPLE INDICATORS AND INDICES