



## Innovation Brief

on International Development Services

### ***Integrated Planning for Sustainable Water Resource Management***

Author: Andrew Jenkins

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#### ***The Problem***

***Coastal Bangladesh is protected by a network of over 125 Polders, with 5,000 Km of coastal embankment. Similar flood control and drainage infra-structure covers a large part of the country.***

***This infrastructure (dykes, canals, sluices etc.) performs at much less than its potential because of minor design problems and poor operation, and is deteriorating rapidly since maintenance is almost negligible.***

***The importance of this infrastructure becomes immediately apparent in the context of an Integrated Coastal Zone Management Strategy. It should be an essential element in a strategy for climate change adaptation.***

***However if we continue with 'business as usual', i.e. follow the traditional cycle of 'Build-Neglect-Rebuild (may be)', with heavy dependence on foreign assistance if/when available, the situation will continue to deteriorate, in a context where rapid population growth means that food production should increase (not decrease).***

Rising urbanization, denser populations, diversifying economies, multiplying uses of water, global climate change, rising competition for water and rising water scarcity all make successful and effective operation and maintenance of water management infrastructure more and more vital.

#### ***The Challenge***

Planning and implementation of water management schemes has traditionally been 'top-down' and

centrally planned. Maintenance hardly received any priority.

How can local coastal communities be challenged and organised efficiently so that they are in a position to work together with the responsible government authorities to find long term solutions to the problem of Operation and Maintenance?

#### ***The Innovation: Integrated Planning for Sustainable Water Resource Management***

It is widely agreed that the solution can be found through an *Integrated Water Resource Management* process, which involves:

- Creating an *enabling environment* of appropriate policies, strategies and legislation for sustainable water resources development and management;
- Putting in place the *institutional framework* through which the policies, strategies and legislation can be implemented;
- Establishing *management instruments* required by the concerned institutions to effectively do their job.

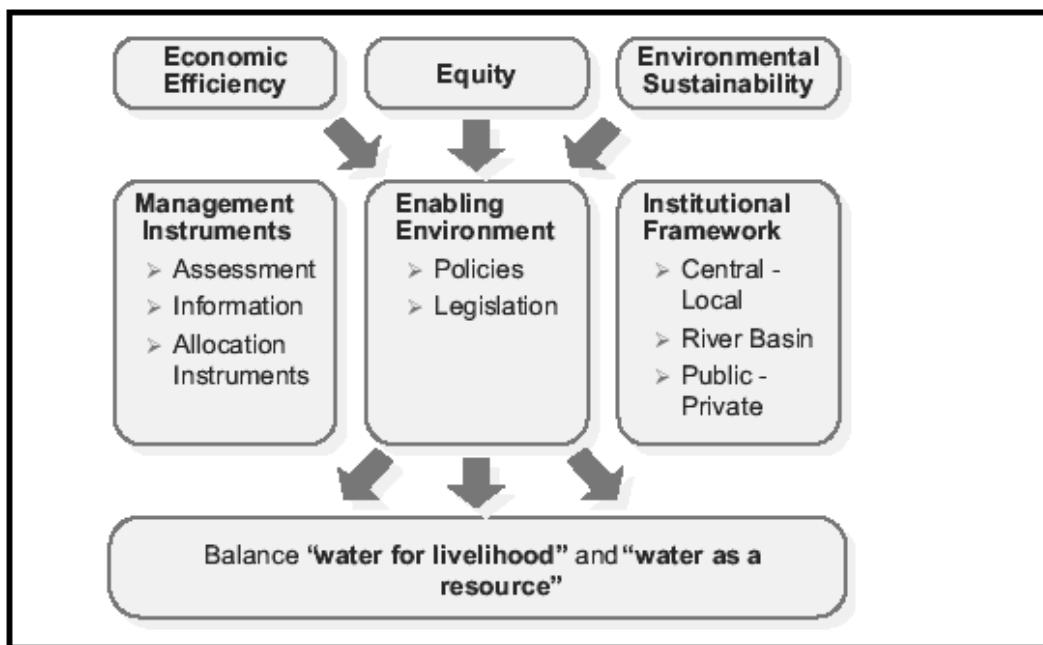
***Community Participation is widely recognised as crucial for sustainable Integrated Water Resource Management.***

Bangladesh now has an *Enabling Environment* in the *National Water Policy* and related documents. There is an existing *Institutional Framework* in *Local Government* and the national network of the *Bangladesh Water Development Board* (which requires further specific strengthening).

**Guidelines for Integrated Planning for Recently Management Instruments** have been developed and tested, in the form of the approved

**Sustainable Water Resources Management** and the **IPSWAM Tool-kit** supporting the Guidelines.

**Figure 1 – The “three pillars” of Integrated Water Resources Management: Enabling Environment, Institutional Framework and Management Instruments.**



The innovative integrated planning approach for water resource management is based on a number of principles which are believed to contribute to sustainable development. These principles are:

- **Participation:** All the interest groups are involved in planning for sustainable water resource management.
- **Social Organization:** Improvement of the resources can only take place if people work together, solve their differences and organize themselves for the management of their resources. Central to the concept of social organization is social unity and effective leadership; people organize themselves around a common interest.
- **Agreed distribution of rights, benefits, concessions and obligations:** Since water is considered to be a common property, all interest groups should negotiate with each other and agree on who will do what, where, and when and how possible benefits will be distributed. Only then can social unity be established and activities receive the necessary support.
- **Integrated approach:** Water management activities in one area affect the use and

opportunities for use in other areas. Therefore all water management related activities have to be analysed and planned in an integrated manner. The integrated approach will also ensure that environmental issues are covered in the planning methodology.

- **Gender related:** The actual role and problems of men and women with regard to water management are taken into consideration, by involving both men and women in the planning process. Specifically, gender issues are addressed at all planning stages.

Based on these principles and on the institutional framework provided by the National Water Policy, a six-step process of **Integrated Planning for Sustainable Water Resources Management** (see Figure 2) has been developed within the Bangladesh Water Development Board.

This methodology could be described as follows:  
 In **Step 1** new projects/polders are identified and selected using specific criteria.  
 In **Step 2** problem identification takes place, which means that primary stakeholders identify the

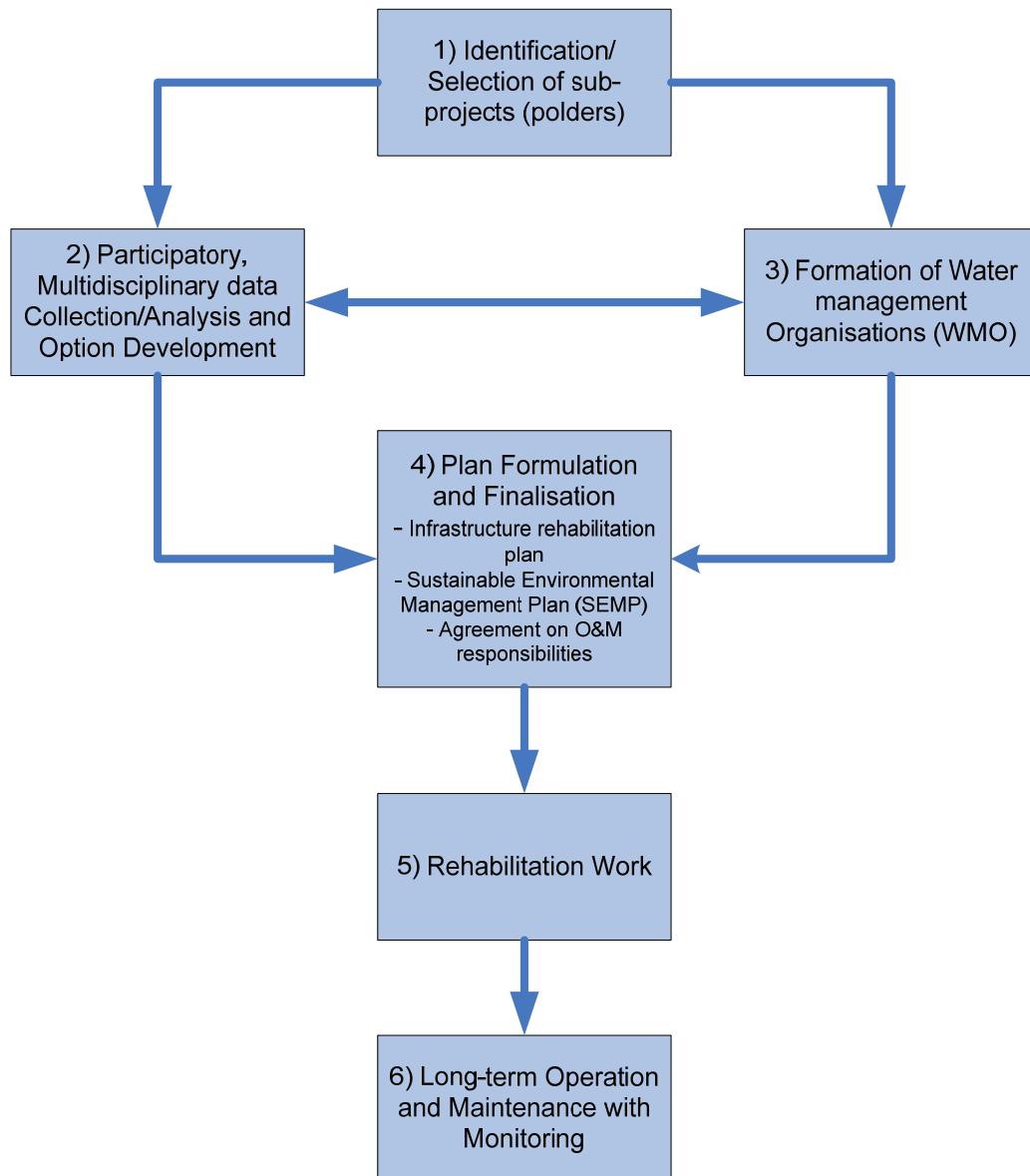
problems they face, analyse causes and effects and identify possible solutions. Secondary stakeholders join with primary stakeholders to discuss and prioritize problems related to natural resources management and the environment.

This leads to identification of the:

- Key water management issues in each village

- Patterns of leadership;
- Social conflicts in the area that hinders implementation
- Likely levels of support that the project can expect.
- Collection of relevant quantitative data and processing for analysis of options for solutions.

**Figure 2 - Six Step Process for Integrated Planning for Sustainable Water Resources Management**



**Step 3** is closely linked with Step 2, as it starts with the creation of awareness in the working area on participatory water management. The importance of this step is the mobilisation and social organisation of the stakeholder groups at community level. This allows them to establish and strengthen the

necessary organisational and institutional structures for participatory water management. The water management organisations that are formed are registered.

Analysis of solutions takes place in **Step 4**. Primary stakeholder groups identify solutions to assess:

- Socio-Economic and gender Issues,
- Technical aspects,
- Economic aspects,
- Environmental aspects,
- Sustainable impact of each option.

After review of the available options the stakeholders options agree upon solutions, which include:

1. An infrastructure rehabilitation plan,
2. A Sustainable Environmental Management Plan (SEMP),
3. Agreement on long-term O&M responsibilities.

In **Step 5** the actual rehabilitation work on infrastructure takes place. The BWDB implements these physical works in consultation with Water Management Organisations (WMOs).

Finally, in **Step 6** the responsibility for operation and maintenance is gradually handed over to the WMOs. An Operation and Maintenance Plan, with monitoring is developed and implemented by the WMOs.

### Results

The six-step approach has so far been successfully tested in ten polders with a population of about 300,000. It has demonstrated that it is possible to actively involve community members in the planning and implementation of infrastructure rehabilitation works and that they are able to take over and contribute to its operation and maintenance.

The Ten Demonstration Polders where the Guidelines have been implemented successfully have produced results, including:

- Effective Community 'Ownership' of the infrastructure and strong participation in operation and maintenance,
- Doubling of the 'flood-free' area in the polders,
- Increase of more than 10% in cropping intensity,
- Increase of up to 50% in crop production,
- Increase of more than 25% in average incomes, and
- Significant poverty reduction.

The participatory planning methodology can therefore be used in the whole coastal area of Bangladesh and with minor adjustments in other areas in the region to rehabilitate flood control and drainage infrastructure.

**Figure 3 - Training Toolkit for *Integrated Planning for Sustainable Water Resources Management***



### Next Steps

The Bangladesh Water Development Board has officially decided to establish a permanent *Participatory Water Management Resources Cell*, to support and promote the adoption of the *Guidelines for Integrated Planning for Sustainable Water Resources Management* throughout Bangladesh.

Euroconsult Mott MacDonald and its partners can assist governments, stakeholders, donors and other technical assistance organizations to design and adopt effective measures **for participatory and integrated Planning for Sustainable Water**

**Resource Management.** We are ready to support clients to design and implement practical solutions for addressing these problems.

### You are welcome to contact us:

Ms. Moniek Van de Ven, Knowledge and Information Manager ([Moniek.Ven@mottmac.nl](mailto:Moniek.Ven@mottmac.nl)), or **Mr Hero Heering**, Project Manager IPSWAM Project ([hero.heering@mottmac.com](mailto:hero.heering@mottmac.com))  
 Euroconsult / BMB Mott MacDonald  
 Amsterdamseweg 15, 6814 CM ARNHEM,  
 The Netherlands. Tel: +31 26 3577111  
[www.euroconsult.mottmac.nl](http://www.euroconsult.mottmac.nl)