

GOVERNMENT OF THE
PEOPLE'S REPUBLIC OF
BANGLADESH

GOVERNMENT OF THE
KINGDOM OF
THE NETHERLANDS

MINISTRY OF WATER RESOURCES

Integrated Planning
for
Sustainable Water Management

(IPSWAM)

Technical Report No. 2

Report of the Institutional Analysis Study

Dhaka, Bangladesh, December 2004

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ANNEX I	Proceedings of the Workshop on the Institutional Analysis Study.
ANNEX II	Written comments received on the Draft Report.
ANNEX III	Memorandum of Understanding between Bangladesh Water Development Board and Department of Agricultural Extension.

ABBREVIATIONS

ADP	Annual Development Plan
BADC	Bangladesh Agricultural Development Corporation
BWDB	Bangladesh Water Development Board
CDSP	Char Development and Settlement Project
CEGIS	Centre for Environmental and Geographic Information Services
CO	Community Organiser
DDP	Delta Development Project
CPP	Compartmentalization Pilot Project
DOE	Department of Environment
DP-III	Directorate of Planning – III
EIA	Environmental Impact Assessment
EIP	Early Implementation Project
EIP-FDR	Early Implementation Project – Flood Damage Rehabilitation
FAP	Flood Action Plan
FCD	Flood Control and Drainage
FCDI	Flood, Control, Drainage Irrigation
GO	Government Organisation
GoB	Government of Bangladesh
GoN	Government of the Netherlands
GPWM	Guidelines for Participatory Water Management
ICZM	Integrated Coastal Zone Management
IPSWAM	Integrated Planning for Sustainable Water Management
IWRM	Integrated Water Resource Management
KJDRP	Khulna - Jessore Drainage Rehabilitation Project
LCS	Landless Contracting Societies
LGED	Local Government Engineering Department
LGI	Local Government Institution
M&E	Monitoring and Evaluation
NEMAP	National Environmental Management Action Plan
NGO	Non-Government Organisation
NWMP	National Water Management Plan
NWPo	National Water Policy
NWRC	National Water Resources Council
O&M	Operation and Maintenance
PCU	Project Coordination Unit
PRA	Participatory Rural Appraised
QC	Quality Control
RAC	Regional Accounts Centre
SC/SW	South Centre / South West
SDE	Sub-Divisional Engineer
SE	Superintending Engineer
SPARRSO	Space Research Remote Sensing Organisation
SRP	Systems Rehabilitation Project
SSWRDSP	Small Scale Water Resources Development Sector Project
TA	Technical Assistance
UP	Union Parishad
WARPO	Water Resource Planning Organisation

WMA	Water Management Association
WMC	Water Management Committee
WMF	Water Management Federation
WMG	Water Management Group
WMO	Water Management Organisation
XEN	Executive Engineer

SUMMARY

IPSWAM (Integrated Planning for Sustainable Water Management) has as its major objective to strengthen the capacity of water sector organisations so that they are able to assume their roles as specified in the NWPo and GPWM.

As part of its activities IPSWAM has carried out an institutional analysis study. The objectives of the study were to:

- Make an institutional analysis as an essential preparation for a through revision of the BWDB's role in the Water Sector as well as in its relations with Local Government Institutions (LGIs), Line Ministries and WMOs.
- Propose an organisational structure and staffing pattern for the BWDB at local and regional levels in the two zones where the IPSWAM programme intervenes, including identification of actions to be undertaken by the BWDB management.

The most important documents, which provide the present policy framework in relation to water resources management are the National Water Policy (NWPo) and the Guidelines for Participatory Water Management (GPWM). In the National Water Policy (NWPo), which was formulated in 1999 the Government of Bangladesh expresses its intention to take all necessary means and measures to manage the water resources of the country in a *comprehensive, integrated and equitable manner*. The Guidelines, which were prepared in 2001, are a follow up of the Guidelines for People's Participation (GPP) in Water Development Projects of 1994 and were prepared as a consequence of the declaration of the National Water Policy to accommodate flexibility, integrity and complementarity in participatory water management. Based on these two documents the National Water Management Plan is being drafted.

The Ministry of Water Resources through the Bangladesh Water Development Board makes major investments in the water sector. The Ministry of Local Government and Rural Development through LGED and the Ministry of Agriculture through BADC also spend a considerable amount in water related activities and investments. Besides, other water related ministries have their own investment programs. Apart from the Ministry of Water Resources, altogether some 35 Central Government Organisations, affiliated with 9 different ministries have been identified with functions relevant to the water sector.

The BWDB is the principal agency of the Government for managing water resources of the country, and it was given the mandate of accomplishing the tasks of executing flood control and drainage (FCD) and flood control, drainage and irrigation (FCDI) projects.

The BWDB is in the process of reform. The most important aspect of the reform program so far is the enactment of the BWDB Act, 2000. The Act has redefined BWDB's mandate under changing circumstances, its organizational structure and has drafted measures for improved efficiency by focussing on

- Operation and maintenance aspects of the water sector projects.
- Involvement of the community and local government institutions at all stages of the project cycle.

The Act provides for the transformation of BWDB to its redefined role by transferring implementation and management of small water schemes to beneficiary groups.

A Reorganization Plan has been prepared which the Ministry of Water Resources approved in September 1998; its implementation has commenced. The main focus of the re-organisation proposal is a downsizing of the staff and as a consequence the total staff is reduced from 18,657 to 8,860 persons. The main change in personnel is that support staff such as gate operators, guards, survey khalashis, chainmen, sweepers etc. will work under contract or will be arranged through the private sector. However, this did not take place so far, as it was expected that it would reduce the performance of the organisation.

The BWDB is organised on functional lines. Thus the operations of the Board are divided into four broad areas. These are administration, finance, operation and maintenance and planning.

The key participants in water management at local, regional, and central level are:

- Water Management Agency (here BWDB).
- Other government agencies or departments (depending on the water management system).
- Local Government Institutions
 - Union Parishad
 - Upazila Parishad (Thana)
 - Zila Parishad (District)
- Development Co-ordinating Committee at Thana (Upazila) and District (Zila) level.
- Local stakeholders through WMOs.

The implementation of the principles defined in the NWPo and further specified in other documents such as the BWDB Act 2000 and Guidelines for Participatory Water Management (GPWM) requires the BWDB to take up new responsibilities. The change in policy, which in effect implies a shift in the functioning of the BWDB from a construction oriented agency to a water management development agency, means that the following aspects have to be addressed:

- Need for the institutionalisation of participatory water resources management in the BWDB.
- Need to ensure integrated management.
- Need for the establishment of multi-disciplinary planning teams.
- Need to address social organisation and capacity building of local institutions.
- Need for decentralisation of planning and authority.
- Need to redefine and reorient the role of BWDB towards advisory functions.
- Need to address gender and gender related issues.
- Need to introduce and decentralise (participatory) monitoring and evaluation.
- Need to address training and human resource management in the BWDB.

In IPSWAM the central planning team has been placed in the BWDB under the Directorate of Planning (DP III) with the aim of supporting its planning capacity. This would be achieved through the placement of an Executive Engineer, a Hydraulic Engineer (SDE), a Civil Engineer (SDE), an Environmentalist, a Sociologist, an Economist, an Agronomist and a Computer Specialist, supported by TA staff. At present all these positions, with the exception of the sociologist (who is on study leave) are filled.

IPSWAM is also mandated to strengthen the planning capacity at regional and local level and implement some of the plans in line with the NWPo and GPWM, through the establishment of Water Management Organisations. For this purpose zonal planning teams have been

established, which would, as proposed in the project document consist of an XEN, an SDE, a Deputy Chief Economics, an Assistant Chief Agriculture, and one or more Extension Overseers; all from the BWDB, supported by two Socio-economists, a Trainer and 2-4 Community Organisers from the technical assistance. In the Inception Report it was mentioned that the Deputy Chief Extension Officer would replace the originally envisaged post of Assistant Chief Agriculture (for lack of an ACA in the Board).

Based on the assessment of the institutional set up the following recommendations are made in relation to IPSWAM.

- The Deputy Chief Extension Officers, based in Jessore and Barisal respectively, who have taken the place of the originally foreseen Assistant Chief Agriculture in the zonal planning teams are not full time available for IPSWAM activities, which may affect the work of the planning teams. It is, therefore, strongly recommended that the DCEOs become full time involved in project activities, which would also benefit cooperation with the divisional XEN O&M, as the latter would be more aware of their activities.
- Since the DCEO are mainly involved in community development, the role and importance given to agriculture in the planning process may be less than required; this should be reviewed and adjustments made if and when required.
- The number of staff required for the position of Extension Overseer/Community Organiser (male and female) should be higher than foreseen in the project documents.
- IPSWAM could facilitate the drafting of MOU between the BWDB and other departments, as this would allow closer cooperation of the officials of the relevant departments.
- The formation of WMOs as legal entity is important for their future sustainability. IPSWAM already coordinates with the Committee for the formulation of WMO registration rules, established in the BWDB and should continue to play a constructive role in this, based on its experiences.
- It is proposed to create an additional BWDB post for training coordinator in the zonal planning teams so that the training capability can be sustained beyond the project period.
- IPSWAM can play and is playing an important role in the organisational change process of the BWDB through: (i) the establishment of demonstrations and practical examples of the new approach and (ii) the use of communication and discussion regarding the new approach as an instrument to initiate change.

In relation to the BWDB the following is recommended:

- As both IPSWAM and WMIP suggest that the organisation and management of community organizations would form an important part of the future work of the BWDB, the future structure of the group of specialists involved in social mobilisation within the BWDB needs to be determined. In the light of this development it might be useful to create a specialised unit based on remaining DLWU officers by renaming the

Water Management Directorate (possibly not the most appropriate name, since the whole BWDB is now, along with some other ministries and agencies engaged in water management) into something like “Community Organisation Directorate”.

- The staff working at the community level needs to be mobile to continue their relationship with the WMOs. This means that logistical support for field staff has to be provided on a long-term basis.
- A better management of water resources would require improved cooperation between major water sector organisations and related agencies. This assumes that the BWDB maintains close linkages with other ministries through the Ministry of Water Resources and horizontal linkages with other line departments at central and field level.
 - At the national level, Memorandum of Understanding (MoU) between the BWDB and the relevant ministries could be drafted that describe the roles and responsibilities of the involved staff and sets out the coordination mechanisms of the respective institutes.
 - At District and Thana level the Development Coordination Committees could be used more extensively as the forum for coordination of water resources related activities between BWDB and other line agencies. Alternatively, a Water Management Coordination Committee could be established at this level, including the related agencies.
- While addressing the gender issues as a consequence of the newly prepared gender equity strategy, the BWDB should place particular attention to the creation of positions for women at field level. This is a critical issue that needs to be addressed, if the BWDB wants to institutionalise integrated participatory planning in the future and principally relates to the specialised functions in the areas of community organisation and training and capacity building. As a consequence, the BWDB may also have to create conditions for female staff deputed at field level that enables them to indeed work and live in the field areas, such as suitable residential accommodation and separate toilet facilities.
- The participatory approach requires considerable training and capacity building for the BWDB staff, LGIs and especially for the created WMOs. For the BWDB this involves the decentralisation of training through the creation of separate specialist posts of training coordinators at zonal level. These positions could form a part of a specialised training cadre, which has to be established under the Training and Staff Development Department on deputation to the zone. Decentralisation of training to the Zone requires the decentralisation of financial resources as well.
- A participatory Monitoring and Evaluation system needs to be introduced and BWDB staff should obtain the capacity and skills to facilitate such a monitoring process.
- The new participatory and multidisciplinary working arrangement requires a new approach to working in the BWDB. Thus the BWDB has to engage in efforts to change attitudes and behaviour, especially stimulating cooperation and a positive attitude to multidisciplinary team work. The change in the organisational culture and mode of operation of the BWDB is involving a high level commitment of top management and active support of the mid and junior level staff.

1.1 General

IPSWAM (Integrated Planning for Sustainable Water Management) is essentially an institutional development programme that aims to assist the Bangladesh Water Development Board (BWDB) in implementing the principles defined in the National Water Policy (NWPo) and further specified in other documents such as the BWDB Act 2000 and Guidelines for Participatory Water Management (GPWM). In view of its experimental nature, IPSWAM is a pathfinder programme, which will try to find a practical way to introduce integrated water resources management, while taking the constraints imposed by the reality on the ground in Bangladesh into consideration.

1.2 Objective of IPSWAM

The objective of IPSWAM is to strengthen the capacity of water sector organisations so that they are able to assume their roles as specified in the NWPo and GPWM. These include:

- Local level Water Management Organisations (WMOs)
- The different offices of the BWDB (headquarter and regional /local level)
- Local Government Institutions (to a limited extent)

Specific objectives are:

- To ensure people's participation in all stages of the project (selection, planning, implementation, O&M and evaluation).
- To establish sustainable water management in selected sub-projects with active participation of people and to develop people's skill/capacity in planning and implementing water management in selected sub-projects.
- To transfer the management responsibilities (fully or partially) from BWDB to the people (WMOs).

The IPSWAM programme areas are the South Central and South Western Zones of BWDB.

IPSWAM is realising its objective by:

- Establishing and developing one central planning team and two Zonal planning teams capable of planning and implementing water management projects in line with NWPo, BWDB Act, 2000 and GPWM.
- Developing and disseminating the specific methods and procedures necessary to make NWPo and GPWM operational.
- Developing local level water management capability and stimulating the transfer of O&M responsibilities to WMOs by introducing IPSWAM in nine selected schemes/sub-projects.

1.3 Programme of Activities

The plan of operation and related activities concentrate on two major tasks namely:

Strengthening of Planning in BWDB, which includes:

- Establishment of the IPSWAM planning Team
- Establishment of the Planning Team in the Southern and South-Western Zone of BWDB
- Training of planning staff
- Institutional analysis
- Development of approaches
- Dissemination of IPSWAM results in the BWDB.

Planning and implementation in selected sub-projects, which involves:

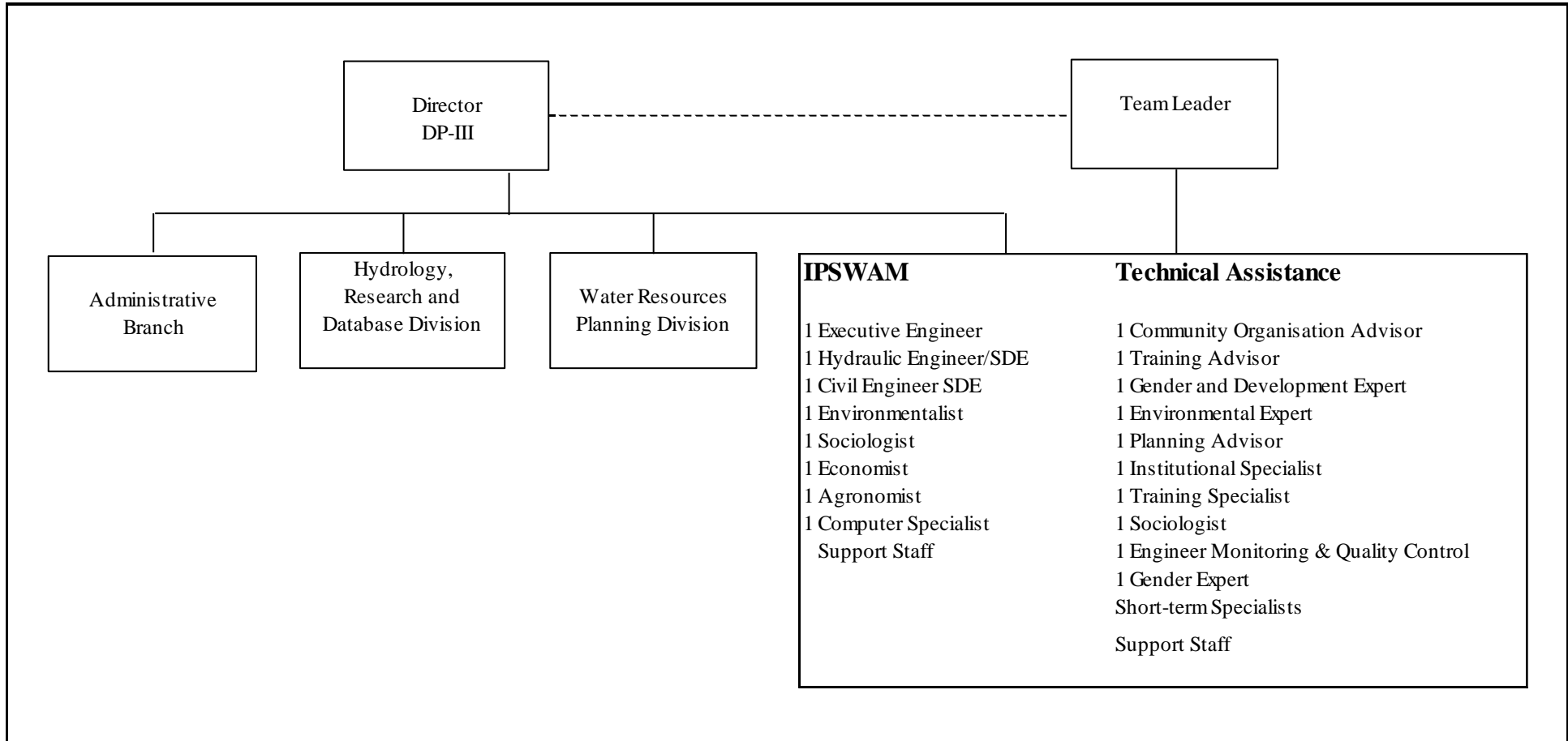
- Selection of sub-projects
- Local level institutional development (WMOs)
- Multi-disciplinary, participatory planning in sub-projects.
- Plan formulation (rehabilitation and Operation and Maintenance (O&M))
- Implementation of physical infrastructure rehabilitation
- Transfer of water management responsibilities
- Monitoring

1.4 Organisational Structure

IPSWAM is placed in the Directorate of Planning III (DP-III). Within DP-III a planning team has been formed consisting of BWDB staff, supported by TA staff (see Figure 1).

In order to provide an effective decentralised planning capacity, zonal planning teams have been formed in the BWDB Southern and South Western Zones at Khulna and Barisal respectively under the administrative control of the Zonal Chief Engineer. Each team is coordinated by an Executive Engineer and further consists of a Deputy Chief Extension Officer, a Sub Divisional Engineer, a Deputy Chief Economics, an Extension Overseer and support staff. Technical assistance to each team is provided through two socio-economists, a trainer and 2-4 community organisers.

Figure 1 : Organisational Chart of the IPSWAM Planning Team in DP-III



2. INSTITUTIONAL ANALYSIS STUDY

As part of its activities IPSWAM has carried out an institutional analysis study as an essential preparation for a through revision of the BWDB's role in the Water Sector. The objectives of the study were to:

- Make an institutional analysis as an essential preparation for a through revision of the BWDB's role in the Water Sector as well as in its relations with Local Government Institutions (LGIs), Line Ministries and WMOs.
- Propose an organisational structure and staffing pattern for the BWDB at local and regional levels in the two zones where the IPSWAM programme intervenes, including identification of actions to be undertaken by the BWDB management.
- Propose a mechanism for the transfer/sharing of water management responsibilities.
- Define a provisional regulatory framework for the registration of WMOs.

The work on the last two points has not yet been finalised and is therefore not incorporated in this report. With regard to the registration of WMOs the project has established contacts with the recently formed Committee for the Formulation of WMO Registration Rules.

2.1 Methodology of the Study

The following steps were identified in the implementation of this study:

- Review and analysis of existing documents/literature and present situation, and the preparation of a position paper on the mechanics of the decentralized water sector:
 - Collection of related documents
 - Identification of water management tasks and indication of how these can be distributed to the lowest possible organization level.
 - Specification of corresponding mandates and responsibilities.
 - Exploration of options for resource mobilization.
 - Collection of information on present status of BWDB's reform programme (change process which has already started)
 - Analysis of the envisaged role of the various stakeholders in the water sector at local, regional and central levels (LGIs, WMOs, line ministries and BWDB.)
 - Preparation of an interim position paper.
- Field assessment of current capabilities of BWDB Zonal field offices (Southern and South-Western Zones i.e., IPSWAM Area):
 - Assessment of the capacities of the various stakeholders to assume their responsibilities.
 - Analysis of existing co-ordination mechanism at local and regional levels (with proposed measures to strengthen their role, if necessary).
- Formulation of the proposed measures for institutional change in the IPSWAM area (Southern and South Western Zones):
 - Analysis of the consequences of a new distribution of responsibilities for the BWDB offices at local and regional levels.
 - Preparation of a proposal for an organisational structure and staffing pattern at local and regional levels.
 - Identification of the action to be undertaken by the BWDB management to restructure the Zonal and local offices.

- Identification of the necessary action to be undertaken by IPSWAM to strengthen the BWDB offices at local and regional levels in these two zones.
- Preparation of the Draft Report
- Workshop on the Report
A workshop in which the results of the study was presented to representatives of the BWDB and of other organisations and agencies working in the water sector was organised on 14 December 2004. The proceedings of the workshop can be found in Annex I. The written comments that were received following the workshop can be found in Annex II.
- Finalization of the Report
In this final version of the report the comments that were received with regard to textual oversights and or factual mistakes that unfortunately appeared in the draft version of the report (which was widely distributed) have been incorporated.

The analysis has been implemented through desk studies, field visits and discussion meetings with relevant officials of BWDB and line ministries and local government institutions and local stake holder, focus group discussions and feed back in small workshops with limited participants for each activity and finalization of the draft report in a national level workshop.

3. WATER RESOURCES DEVELOPMENT IN BANGLADESH

3.1 Introduction

Water resources management in Bangladesh faces immense challenges in order to resolve diverse problems and issues. The most critical of these are floods in the wet season and the scarcity of water in the dry season; the expanding water needs of a growing economy and population; the supply of safe drinking water and sanitation; arsenic problem; water pollution and massive river sedimentation and river bank erosion. Furthermore, there is a growing need for maintaining the eco-systems, particularly the fish resources and wetlands. The water management is increasingly facing challenges of exogenous developments of a global nature, such as climate change and sea level rise, as well as of upstream river basin developments in neighbouring countries. Finally, there is the issue of competitive demand of various water uses.

Based on the above, the goals and objectives for the development and utilization of water resources in Bangladesh may, in short, be stated as follows:

Goals:

- Make efficient use of water resources to optimise the growth of agriculture, including fisheries, forestry and livestock.
- Provide navigational facilities for the growth of commerce, industry and transportation.
- Prevent land, water and environmental degradation.
- Accommodate land reclamation and accretion.
- Minimize the adverse effect of flood and drought on rural and urban communities.

Objectives:

- Irrigation objectives, including major surface water irrigation and minor irrigation to meet agricultural demand.
- Flood management objectives, including protection of critical urban and rural areas and control of land erosion from river actions.
- Energy and power generation objectives, specifying the use of dams and other control structures.
- Navigation objectives, specifying the use of water for inland navigation.
- Land reclamation and accretion objectives, specifying the use of reclaimed land.
- Poverty alleviation objectives.

To fulfil the above goals and objectives the erstwhile East Pakistan Water and Power Development Authority (EPWAPDA), an autonomous organisation, was created in 1959 under the East Pakistan Water and Power Development Authority Ordinance of 1959 (EP order No.1 of 1959). The present Bangladesh Water Development Board was established in 1972 under presidential order no. 59 of 1972, when the former EPWAPDA was split into two organisations: BWDB dealing with water and PDB dealing with power. BWDB is a body corporate under the administrative control of the Ministry of Water Resources.

3.2 Present Policy Framework

3.2.1 The National Water Policy

The **National Water Policy (NWPo)** was formulated in 1999. In it the Government of Bangladesh expresses its intention to take all necessary means and measures to manage the water resources of the country in a *comprehensive, integrated and equitable manner*. The policy declares its intention of ensuring continued progress towards fulfilling the national goals of *economic development, poverty alleviation, food security, public health and safety, decent standard of living for the people and protection of the natural environment* with the following six formative objectives:

- To address issues related to the harnessing and development of all forms of surface water and groundwater and management of these resources in an efficient and equitable manner;
- To ensure the availability of water to all elements of the society including the poor and the underprivileged, and to take into account the particular needs of women and children;
- To accelerate the development of sustainable public and private water delivery systems with appropriate legal and financial measures and incentives, including delineation of water rights and water pricing;
- To bring institutional changes that will help decentralise the management of water resources and enhance the role of women in water management;
- To develop a legal and regulatory environment that will help the process of decentralisation and sound environmental management, and will improve the investment climate for the private sector in water development and management;
- To develop a state of knowledge and capability that will enable the country to design future water resources management plans by itself with economic efficiency, gender equity, social justice and environmental awareness to facilitate achievement of the water management objectives through broad public participation.

The NWPo provides a comprehensive policy framework for dealing with such issues as river basin planning, water rights and allocation, delineation of public and private domains, water supply and sanitation, preservation of the natural environment and the developmental concerns of fisheries, navigation and agriculture. The policy also provides guidance on its economic and financial management (water pricing), participation by stakeholders, decentralized management and delivery structures. The policy also formulates views on regulations, incentives, public investment plans and environmental protection and on the inter-linkages among them. Finally, it provides the basic principles for reforming the Water Resource Planning Organisation (WARPO) and the BWDB.

3.2.2 National Water Management Plan

The National Water Management Plan (NWMP) has been prepared by the Water Resources Planning Organisation (WARPO), another important agency under the Ministry of Water

Resources (MoWR) which is mandated with the task of preparation of the plan. The Government of Bangladesh has approved the plan. The NWMP has been prepared in a comprehensive and integrated manner to meet the broad objective of the NWPo. The NWMP has accorded priority to such area as institutional development, creation of an enabling environment, major river development, protection of towns and rural areas, agriculture and water management, natural environment and fisheries and disaster management. It contains a firm plan for the next five years, an indicative plan for the subsequent five years and a perspective plan to 2025. Sector agencies like BWDB and other organisations/departments of the government and the local bodies are expected to prepare micro level planning in conformity with the NWMP and approved government guidelines and implement the plan accordingly.

3.2.3 National Action Plan for Women's Advancement

The National Action Plan for Women's Advancement sets out a number of activities for various sectors needed for the implementation of the National Policy for the Advancement of Women. The latter policy, published in 1997 aims at improving women's conditions and social status. One of its major goals is to establish equality between men and women in all spheres of national life.

3.2.4 Guidelines for Participatory Water Management

These guidelines, which were prepared in 2001, are a follow up of the Guidelines for People's Participation (GPP) in Water Development Projects of 1994. The guidelines were prepared as a consequence of the declaration of the National Water Policy in 1999 to accommodate flexibility, integrity and complementarity in participatory water management. Its immediate objectives are therefore to:

- Elaborate the provisions incorporated in the NWPo, 1999 in respect of stakeholder participation/involvement.
- Make available harmonised guidelines for participatory water management for application in the field.
- Increase/ improve stakeholder participation/involvement in water management.
- Give the local stakeholders a decisive voice at all stages of water management.
- Raise environmental awareness among the local stakeholders and the implementing agencies involved with participatory water management.

3.2.5 The Draft Water Code 2002

The draft Code suggests appropriate water sector roles for the government and refers in this respect amongst others to the establishment of an enabling environment; regulations of resource exploitation, service delivery and water quality; the facilitation of wise use etc.

3.2.6 BWDB Gender Equity Strategy

A Gender Equity Strategy is under preparation by the BWDB in response to its changed approach to planning as reflected in the NWPo and GPWM and a first draft has been prepared in July 2004. The goal of the strategy is that: “The BWDB will work to ensure gender equity in the efficient development and management of water resources and all its activities through the participation of staff and communities”. The strategy aims at describing the process and related actions that are needed to ensure that all the BWDB’s programmes and activities address the gender equity issues. The document further provides short medium and long term targets and activities for the various areas of work that the BWDB should address in order to attain the overall objective of the strategy.

3.3 Current Institutional Framework

The Ministry of Water Resources through the BWDB makes major investments in the water sector. The Ministry of Local Government and Rural Development through LGED and the Ministry of Agriculture through BADC also spend a considerable amount in water related activities and investments. Besides, other water related ministries have their own investment programs. Apart from the Ministry of Water Resources, altogether some 35 Central Government Organisations, affiliated with 9 different ministries have been identified with functions relevant to the water sector. There is very little co-ordination between these agencies. The National Water Resources Council presides over all these institutions in matters of water policy and legislation. Figure 2 provides an overview of the relationship of the MOWR with other Ministries.

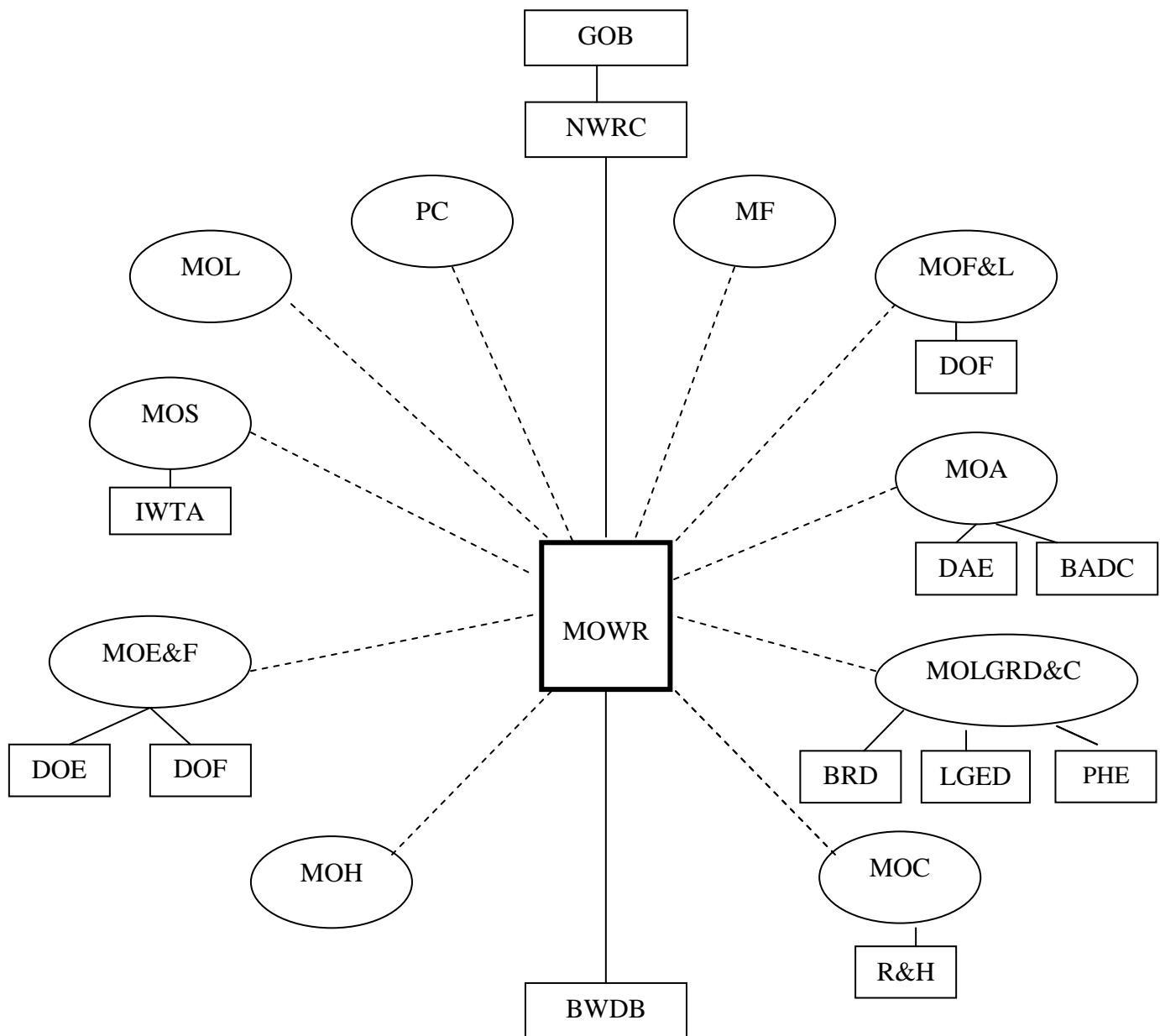
Being under the MOWR, the BWDB has to maintain relationships and linkages with several other organisations from other sectors that are involved in water related activities. These are: the Department of Fisheries, (DoF) Department of Environment (DoE), Local Government Engineering Department (LGED), Directorate of Agricultural Extension (DAE), Public Health Engineering Department (DPHE), Bangladesh Inland Water Transport Authority (BIWTA), Road and Highways Department (R&H) Bangladesh Agricultural Development Corporation (BADC), Department of Forest (DoF) Bangladesh Rural Development Board (BRDB), Water and Sewerage Authority (WASA) respective Municipal Corporations /Municipality and NGOs working in Bangladesh (see Figure 3).

The principal public organisations, under the Ministry of Water Resources, are the Water Resources Planning Organisation (WARPO), Bangladesh Water Development Board (BWDB), River Research Institute (RRI), Institute of Water Modelling (IWM), Centre for Environmental Geographical Information Systems (CEGIS) and Joint River Commission (JRC). WARPO is supposed to evolve national policies and plans for water resources, ensuring optimum utilisation among various users such as agriculture, fisheries, navigation, public health, industry etc. WARPO is also expected to consolidate data on water collected by various agencies. The RRI which originally included the Surface Water Modelling Centre (SWMC) is a research and data generation unit for hydraulic and river studies. The SWMC has been renamed Institute for Water Modelling (IWM) and became a trust. It is involved in the mathematical modelling for different water resource utilization studies. The CEGIS was originally established as a project, but is now a trust and operates in the area of mapping and GIS data collection and analysis. The function of JRC is to make investigation on water

sharing of common border rivers with India and provide technical advice to both the India and Bangladesh Governments.

An overview of the major areas of responsibility and functions of the various organisations working in the water sector is given in Table 1.

Figure 2. Institutional setup of MOWR and related Ministries.

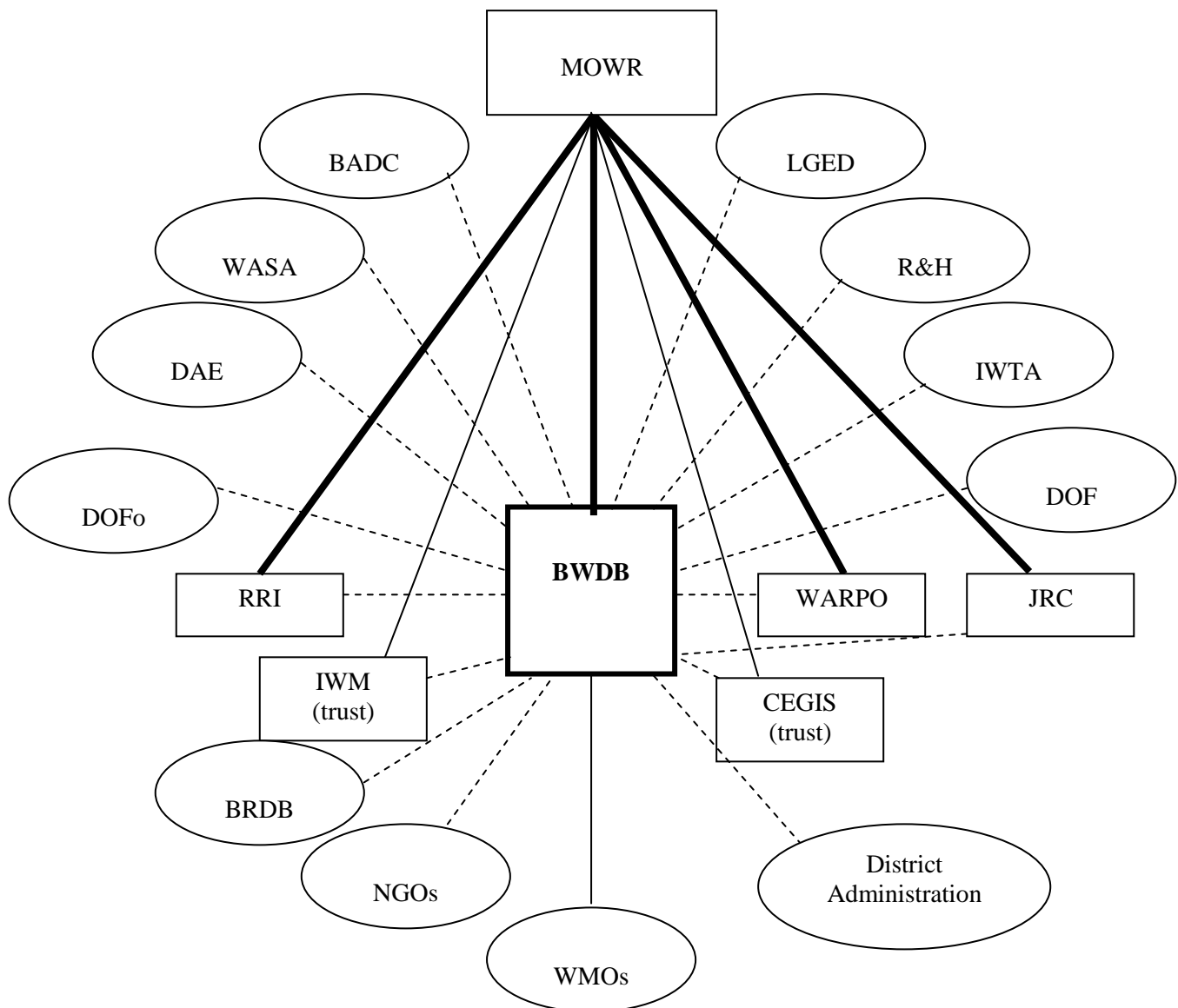


----- Horizontal relation
 _____ Vertical relation

BADC Bangladesh Agricultural Development Corporation
 BRDB Bangladesh Rural Development Board
 BWDB Bangladesh Water Development Board
 DAE Directorate of Agricultural Extension
 DOE Directorate of Environment
 DOF Department of Fisheries
 DOFo Department of Forests
 GOB Government of Bangladesh
 IWTA Inland Water Transport Authority
 LGED Local Government Engineering Dept.
 MF Ministry of Finance
 MOA Ministry of Agriculture

MOC Ministry of Communication
 MOE&F Ministry of Environment & Forests
 MOF&L Ministry of Fisheries & Livestock
 MOH Ministry of Health
 MOL Ministry of Land
 MOLGRD&C Min. Of Local Govt., Rural Development and Co-operatives
 MOS Ministry of Shipping
 MOWR Ministry of Water Resources
 NWRC National Water Resources Council
 PHE Public Health Engineering
 PC Planning Commission
 R&H Roads and Highways Department

Figure 3. Institutional setup of BWDB and related departments and agencies



----- Horizontal relation
 _____ Vertical relation

BADC Bangladesh Agricultural Development Corporation
 BRDB Bangladesh Rural Development Board
 BWDB Bangladesh Water Development Board
 CEGIS Centre for Environmental Geographical Information System
 DAE Directorate of Agricultural Extension
 DOF Department of Fisheries
 DOFo Department of Forests
 IWM Institute for Water Modelling
 IWTA Inland Water Transport Authority
 JRC Joint River Commission
 LGED Local Government Engineering Dept.

NGO Non Government Organisation
 MOWR Ministry of Water Resources
 RRI River Research Institute
 R&H Roads and Highways Department
 WASA Water and Sewerage Authority
 WARPO Water Resources Planning Organisation
 WMO Water Management Organisation

Table 1. Overview of the major functions of important organisations working in the water sector.

Organisation	Function
Planning Commission	<ul style="list-style-type: none"> • Processing and approval of all development projects • Establish multi-sector investment priorities • Recommend allocation of resources
National Water Resources Council (NWRC) Water Resources Planning Organisation (WARPO)	<ul style="list-style-type: none"> • Approval of national water policies • Macro level water resource planning • Maintenance of water resources database • Preparation of reports on major water programs • Preparation of national policies for water resources
River Research Institute (RRI)	<ul style="list-style-type: none"> • Surface water (scale and physical) modelling • River training studies
Joint River Commission (JRC)	<ul style="list-style-type: none"> • Monitor and manage cross-boundary rivers on basis of bi-lateral agreements
Institute for Water Modelling (IWM)	<ul style="list-style-type: none"> • Mathematical river modelling • Flood management modelling • Irrigation system modelling • National and regional modelling • Environmental modelling (e.g. modelling for arsenic contamination)
Centre for Environmental Geographical Information System (CEGIS) Bangladesh Water Development Board (BWDB)	<ul style="list-style-type: none"> • GIS and remote sensing activities for the sector • Planning and implementation for the development of rivers, flood control, drainage surface irrigation and draught proven. • Prevention of salinity intrusion and desertification • De-siltation of channel for navigation, fisheries, forestry, wild life development and improvement of the environment • Collection of ground and surface water data • Flood fore-casting and warning • River surveys • Establishment of Water Management Organisations and capacity building. • Town protection schemes
Local Government Engineering Department (LGED)	<ul style="list-style-type: none"> • Planning, designing and implementation of rural infrastructure development projects. • Thana/Union drainage and embankment planning, irrigation planning, land and water use planning. • Small scale water resources schemes • Canal digging programs • Some of the secondary roads

Organisation	Function
Roads and Highways Department (R&HD) Public Health Engineering (PHE)Department Department of Agricultural Extension (DAE)	<ul style="list-style-type: none"> • Establishment and maintenance of highways, feeder, approach and link roads; including the construction of bridges • Rural and urban water supply and sanitation • Information dissemination on agricultural technology including water and land-use
Bangladesh Agricultural Development Corporation (BADC)	<ul style="list-style-type: none"> • Operation of low lift pumps and tubewells • Harnessing of hill streams • Salinity control, distribution of water for irrigation
Inland Water Transport Authority (IWTA)	<ul style="list-style-type: none"> • River conservancy work, including river training for navigation purposes • Disseminating navigational and meteorological information, including river charts • Hydrographic survey • Programming for dredging and revival of dead or dying rivers, channels, canals, etc. • Develop, maintain and operate inland river ports • Develop rural water transport
Department of Fisheries (DoF)	<ul style="list-style-type: none"> • Develop inland and offshore fisheries • Development of rules and regulations for utilization of fisheries resources. • Planning for fish cultivation
Department of Environment (DoE)	<ul style="list-style-type: none"> • Monitoring pollution level of rivers, underground and drinking water • Collection and analysis of data concerning environment • Assist in preparation of EIP for different agencies
Municipal Corporations/Municipality	<ul style="list-style-type: none"> • Providing sanitation services • Manage underground sewerage systems • Supply water for public and private purpose • Undertake schemes for provision, storage and distribution of water • Regulate, control and inspect all private sources of water in the urban area • Sanction new wells • Sanction water pumps and other sources of drinking water in the urban area. • Provide a system of public drains undertake drainage schemes and manage public water courses in the urban area.
Water and Sewerage Authority (WASA) (Dhaka and Chittagong) Non-Governmental Organisations (NGOs)	<ul style="list-style-type: none"> • Construct, improve and operate water supply and sewerage works as well as other facilities to improve environmental sanitation in the city • Construction of secondary roads • Community welfare activities

4. THE BANGLADESH WATER DEVELOPMENT BOARD

As mentioned before, the Bangladesh Water Development Board (BWDB) started its operation in 1959 as the Water Wing of the erstwhile East Pakistan Water and Power Development Authority. As the principal agency of the Government for managing water resources of the country, it was given the mandate of accomplishing the tasks of executing flood control and drainage (FCD) and flood control, drainage and irrigation (FCDI) projects. After the independence of Bangladesh, the Authority was restructured in 1972 into two different organisations dealing with water and power separately.

To date more than 529 projects have been implemented by the BWDB of different types and scale and with various levels of success. The activities carried out by the BWDB have generated a very rich and diverse knowledge base, from which several lessons could be learned. As works progressed in the sector, it for example became clear that inherent contradictions existed in the mandate and the various methods followed by the Board in carrying out its responsibilities. Despite great efforts from the side of the BWDB and large investments made in the water sector, mainly through donor assisted projects (amounting to more than US\$ 3 billion), subsequent reviews revealed that several of these projects were performing below expectations. This was mainly attributed to a lack of maintenance.

At the same time it was observed that, while over the years the focus of water development and management shifted towards joint management, user directed activities, transparency and efficient management techniques, the organisational culture of BWDB remained practically unchanged. This resulted in increasing problems with the internal working of the organisation and its ability to interact with the people and deliver the appropriate level of services to its clients. Therefore the Guidelines for People's Participation were prepared by the BWDB in 1995. Later, in 2001, the Government approved the Guidelines for Participatory Water Management (GPWM). However, absence of an enabling environment did not see many advances in this area. The culture of a consultative process in the management of water resources could not permeate through the rank and file, and the top down approach continued.

It was apparent that improving the efficiency of BWDB depended to a large extent on setting its own house in order. But this was not enough. BWDB was constrained in its activities by what other agencies do in the sector. It was apparent that the activities of BWDB had a direct bearing on some of the activities of the other water-related agencies whereas the activities of the others definitely had their impact upon the work of the Board. There was thus a need for a more comprehensive and holistic approach towards *Integrated Water Resources Management* for obtaining optimal benefits. Fortunately, during the 1990s a series of bold initiatives were taken in the water sector that defined an integrated framework. The specific elements of this framework include: the National Water Policy (NWPo), the National Water Management Plan (NWMP) and the on-going reforms of BWDB.

The long-term vision of the Government about the future shape and functions of the BWDB have been reflected in the directives given in the NWPo. Those directives centre around two basic concepts. Firstly, the BWDB must rejuvenate itself to perform new and challenging tasks that will be required of it in the new millennium. Secondly, it must not operate in those areas that need to be decentralized in the interest of efficiency and sustainability. Over time, the BWDB would emerge as a highly professional water management organisation dealing with large-scale projects and issues, leaving the ownership and management of small and medium-scale projects to local bodies and other beneficiary groups. The NWPo made the following concrete stipulations about the mandate and structure of the BWDB that had a tremendous influence in the drafting of the new BWDB Act, especially:

- emphasizing the separation of policy functions from those of operation and management to bring about greater accountability and transparency;
- confining BWDB's planning function to sub-regional and local level only by designating the Water Resources Planning Organisation (WARPO) as the exclusive agency for macro-level water resources planning;
- making BWDB responsible for execution of projects above 1000 ha, leaving the development of small-scale projects to local bodies;
- proposing management transfer of small and medium scale projects to beneficiaries;
- emphasizing the involvement of stakeholders at all stages of the project cycle.

5. INSTITUTIONAL REFORM IN THE BWDB

5.1 The BWDB Act 2000

The most important aspect of the reform program and structural adjustment process undertaken by the Government of Bangladesh for the transformation of BWDB is the enactment of the BWDB Act, 2000 that requires that BWDB's functions have to be guided by the NWPo and the NWMP. This is considered as the first move towards attaining the future vision. It could also be seen as an intermediate measure for providing a smooth transition from the past to the future. As one of its most important features, the Act has redefined BWDB's mandate under changing circumstances, its organizational structure and has drafted measures for improved efficiency. It also focuses on (a) operation and maintenance aspects of the water sector projects; and (b) involvement of the community and local government institutions at all stages of the project cycle. The Act provides for the transformation of BWDB to its redefined role by transferring implementation and management of small water schemes to beneficiary groups.

For projects with a command area less than 1000 hectares the following ruling applies:

- The Board shall only implement projects having a command area of more than 1000 hectares.
- The Local Authority shall be entitled to execute FCDI projects having command of less than 1000 hectares.
- The Board shall transfer ownership of FCD and FCDI projects up to 1000 hectares to the Local Authorities.

For project with a command area between 1000 and 5000 hectares:

- Management of new projects with command area less than 5000 hectares shall vest with beneficiary organisations.
- The Board shall gradually transfer the management of all existing water projects with a command area of more than 1000 hectares and less than 5000 hectares to beneficiary organisations.

For projects with a command area greater than 5000 hectares:

- Management of these projects shall vest in joint management committees comprising of beneficiary organizations formed for this purpose.

A major change in BWDB's structure brought by the Act is the separation of policy and oversight functions from operational management. Top management is now vested in a policy and oversight Governing Council (GC) or Board of directors with thirteen Directors: seven from the Government and six from outside the Government. The GC thus provides a forum for multi-agency and stakeholders participation and brings the input and oversight of stakeholders, professionals and the civil society to bear into the operations of the BWDB. The Act also has moved the locus of decision-making from the Ministry of Water Resources to the GC itself, although the GC will still be headed by the Minister for Water Resources, with the Secretary of the Ministry as a member.

5.1.1 Functions of the BWDB under the Act

The BWDB Act of 2000 has somewhat reduced the scope of work of the BWDB but what remains is more rational, manageable, people-oriented and focused. According to the BWDB Act of 2000, the Board shall be responsible for carrying out the following functions under broad based mandate of water resources development and management in the country in the light of National Water Policy and National Water Management Plan.

Structural functions:

- Construction of dams, barrage, reservoirs, embankments, regulators or other structures for development of river, flood control, drainage, surface irrigation and drought prevention;
- Dredging, re-excavation and de-siltation of water channels and removal of obstacles from the mouths of rivers for improvement of water flows or diversion of water for assisting fisheries, navigation, forestry, wildlife preservation and up gradation of environment;
- Works for preservation, land accretion, reclamation and estuary control;
- River training and river bank protection for the protection of towns, bazaars, haats and places of historical and public importance from the hazards of land erosion;
- Construction and maintenance of coastal embankment;
- Prevention of salinity intrusion and desertification;
- Harvesting rainwater for irrigation, environmental protection and supply of drinking water.

Non-structural functions:

- Flood and drought forecasting and warning;
- Hydrological survey and investigation;
- Development of forestry and fisheries on land available around BWDB's infrastructures, and construction of roads on embankments in conjunction with relevant government agencies, for the preservation and improvement of the environment as well as for poverty alleviation;
- Basic and applied research on water management;
- Establishment of water user's association and other water users/stakeholders organisations, their training and participation in project planning, implementation, operation and maintenance and project cost recovery for long-term sustainability of benefits to the beneficiaries of completed projects.

5.1.2 Water Management Tasks

The BWDB Act thus provides a clear mandate and operating jurisdiction to the Board and assigns the organisation as the lead public sector agency for undertaking major water development projects and programmes. The mission of BWDB is to provide large-scale

engineering support for the implementation of the National Water Sector Strategy and Plan. It will be involved in planning and implementation of all major surface water development projects and other FCDI project with command areas above 1000 ha. It would not be involved in sector planning.

Based on the functions stipulated in the Act and mentioned in the previous chapter the BWDB is involved in the following major activities and tasks:

Tasks and activities for structural functions:

- Participatory planning with multidisciplinary teams, detailed design and implementation of projects/sub-projects (FCD, FCDI, IRR, Erosion protection, dredging of rivers etc.).
- Participatory operation and maintenance of completed projects/sub-projects:
 - Preparation of operation plan including water management plan.
 - Preparation of maintenance plan.
 - Preparation of need based budget.
 - Delineation of responsibilities between WMOs and BWDB.
 - Implementation of O&M plan.
 - Monitoring and evaluation with special emphasis on environmental monitoring.

Tasks and activities for non-structural functions:

- Flood and drought forecasting and warning:
 - data acquisition;
 - data analysis;
 - preparation of forecasting and warning on flood and drought;
 - dissemination of information.
- Hydrological survey and investigation:
 - establishment of meteorological stations and recording of data;
 - establishment of water level gauge and recording;
 - river cross-section survey of major and medium rivers;
 - discharge measurement, sediment load measurement and salinity observation etc.;
 - compilation of all data.
- Stakeholders' participation:
 - social mobilisation and ensuring public participation at all stages of project cycle;
 - development of water management organisations (WMOs);
 - capacity building of WMOs;
 - ensuring WMOs' participation in implementation O&M, and monitoring and evaluation;
 - performance monitoring of WMOs;
 - handing over management responsibilities to WMOs and LGIs.

5.2 Other Reform Measures

- A Reorganization Plan has been prepared and its implementation has commenced.

Since the previous re-organisation of BWDB in 1984, there have been considerable changes in the working situation within the Board with regard to workload and staff strength. Accordingly, in September 1998 the Ministry of Water Resources approved the re-organisation of BWDB. The main focus of the re-organisation proposal is a

downsizing of the staff and as a consequence the total staff is reduced from 18,657 to 8,860 persons. The main change in personnel is that support staff such as gate operators, guards, survey khalashis, chainmen, sweepers etc. will work under contract or will be arranged through the private sector. The Directorate of Land and Water Use (DLWU) will be phased out and some technical units will be abolished or merged. A new Directorate of Water Management is proposed under Member O&M (Now Additional D.G. O&M) and the post of Director (Land & Water Use) has been re-designated as Chief, Water Management. The re-organisation document contains a three-page summary of the proposed reduction and re-assignment of the staff and the rest of the document lists the proposed staff and staff hierarchies. The document thus provides little information on the rationale behind the proposed structure and staff strength.

- In order to operationalise the management transfer of small schemes to the local stakeholders the “Guidelines for Participatory Water Management (GPWM) as mentioned previously have been approved.
- Several activities have been completed for the development and improvement of the BWDB’s Administrative and Financial Procedures, such as:
 - Internal Work Procedures.
 - Job Descriptions of Employees.
 - Delegation of Administrative and Financial Powers.
 - Modernisation of BWDB’s Accounting and Financial System.
 - Draft regulations for collection of service charges from irrigation projects.
 - Revision of Rules for Enlistment of Contractors and revision of Procurement Documents for improvement of procurement contracts.
- A Draft Vision Statement of BWDB has been prepared and is in the process of finalization.

6 BWDB ORGANISATIONAL STRUCTURE

The BWDB is organised on functional lines. Thus the operations of the Board are divided into five broad areas. These are administration, finance, operation and maintenance, planning and implementation. Recently implementation has been merged with O&M for sustainable O&M in an efficient manner. This merger will increase the commitment to run the project successfully after the physical work is completed.

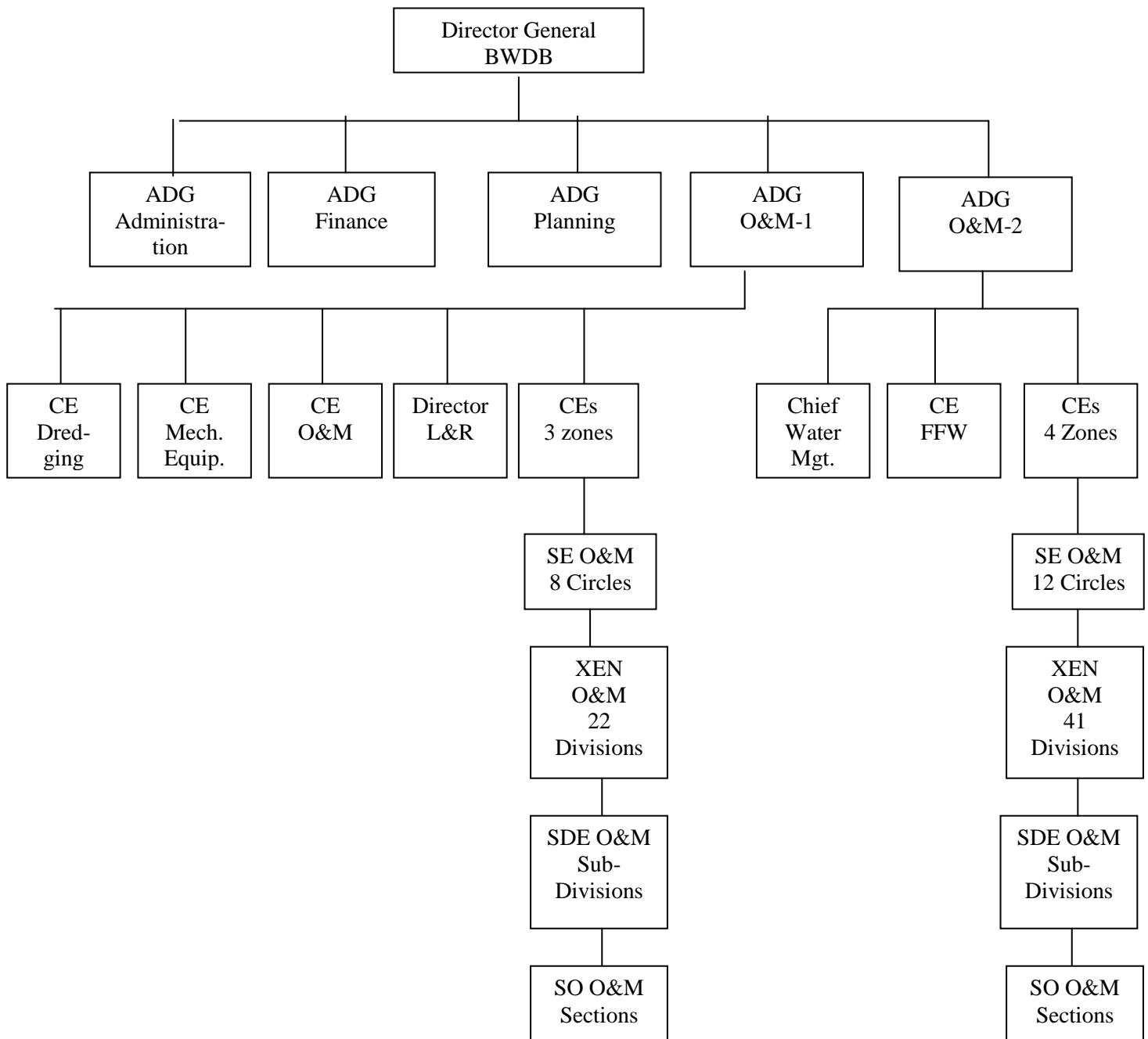
BWDB is basically a field-oriented organisation. Except for the Administrating Wing, all other Wings have their field outfits extending deep inside the rural areas. The basic work of the organisation is carried out by the O&M Wing, which manages the largest number of professionals in the field. The field operations of Planning and Finance Wings provide necessary support to the O&M, which includes implementation, so their work can be carried out smoothly.

The core of the BWDB organisation is its O&M field units, starting from the Sections to the Zones under the Zonal Chief Engineer. Almost all of the functions assigned to the Board under the BWDB Act are performed by these elements, with necessary support from such units as finance, administration and planning. The Department of Hydrology is the only division of the Board that has a parallel set-up in the field, though on a much smaller scale. Strategically, the BWDB is organised in the field on the principle of unity of command of all field activities despite the existence of a number of specialised activities. There is thus no separate unit for such specialised activities as riverbank management, integrated coastal zone management or land reclamation. These activities form part of the responsibilities of the O&M organisation.

The field establishment of the O&M wing is built up from the lowest to the highest levels on the basis of jurisdiction, volume of work, complexity and level of responsibility. At the lowest level, covering more or less the administrative jurisdiction of one or more thanas, but mostly on the basis of volume of works, is the Section under the charge of a diploma engineer called a Section Officer (SO). A few Sections make up a sub-division headed by a Sub-Divisional Engineer (SDE) and a few Sub-divisions constitute a Division. This is the most crucial level since most of the operational activities are planned, processed and followed up from here. The hierarchical linkage of O&M wing is depicted in Figure 4.

An Executive Engineer (XEN) is in charge of a Division and the Executive Engineers are supervised by Superintending Engineers (SE) and Chief Engineers (CE). A few Divisions make up a Circle under the charge of a SE while a Zone consists of a few Circles headed by an additional Chief Engineer/Chief Engineer. The CE is the highest-ranking official of the BWDB in the field. The field set up of the O&M wing consists of 7 zones, 21 circles and 63 divisions.

Figure 4. Organogram of the O&M wing in BWDB.



7. ROLES OF THE VARIOUS STAKEHOLDERS

The key participants in water management at local, regional, and central level are:

- Water Management Agency (here BWDB).
- Other government agencies or departments (depending on the water management system).
- Local Government Institutions
 - Union Parishad
 - Upazila Parishad (Thana)
 - Zila Parishad (District)
- Development Co-ordinating Committee at Thana (Upazila) and District (Zila) level.
- Local stakeholders through WMOs.
- NGOs

The roles of the various stakeholders at different level of the project cycle are described below:

7.1 Role of the BWDB

BWDB is the implementing agency and co-ordinating agency for project formulation and planning, design and implementation of the project and sub-sequent O&M and monitoring and evaluation.

In identification of system constraints, the BWDB is a technical advisor and co-ordinator. It is also responsible for keeping all information up to date regarding system constraints. The monitoring of environmental indicators and the initiation of appropriate mitigating actions when deteriorating trends are observed are also the responsibility of the BWDB.

In system operation, the BWDB is the service provider and advisory body. Services are to be provided in respect of operation planning as well as monitoring and evaluation of the system. With regard to operation itself the BWDB plays an active role in those cases where the system includes major infrastructure for the functioning of which the BWDB has explicitly been given responsibility.

In system maintenance the BWDB has, in the first place, to provide technical guidance in respect of maintenance planning, implementation and subsequent monitoring and evaluation. For large-scale infrastructure BWDB has an active role in maintenance.

7.2 Role of other Related Government Agencies/Departments

Other Government agencies and departments, provide their specialised know-how and expertise to the process of project formulation/planning whenever applicable. Another role is to provide necessary information regarding programmes implemented under their authority in the project area so that these can be properly co-ordinated.

7.3 Local Government Institutions (LGIs)

The role of Parishads and Parishad Chairman is that of representative and leader. They are the democratically elected representatives of all the local stakeholders and represent their stakes in the water management projects. They will provide supporting, facilitating and co-ordinating

assistance to the BWDB through their representatives and serve as advisors to the concerned WMOs.

7.4 Development Co-ordination Committees at Thana and District Level.

The role of the Thana and District Development Coordination Committee is to co-ordinate the activities of various government departments and agencies in all stages of the project cycle and ensure that these reinforce each other or at least do not compete with or frustrate each other. In the meeting of the District Development Committee, under the chairmanship of the Deputy Commissioner, all the line departments provide detailed information of their continuing projects and activities and discuss possible constraints.

7.5 Local Stakeholders through WMOs

The role of the local stakeholders in the identification stage is that of system users who are affected either positively or negatively. In project formulation and planning local stakeholders are a main source of information because of their knowledge about the area and their problems. During the detailed planning, design, and institution-building stage stakeholders' participation includes assisting the professional teams of the BWDB to get access to necessary local experience, insights and best practice-examples.

During the implementation and subsequent O&M stages, the local stakeholders' participation will be through institutions i.e., through WMOs. Their role is to ensure that the construction is done according to the detailed design and specifications and then to take over management responsibility. During implementation stakeholders provide local resources and carry out specific works by themselves as agreed before implementation.

The role of the WMOs in system operation and maintenance is that of guardian of the interest of all the local stakeholders and that of a representative body of all those local stakeholders. Through representation, the local stakeholders indirectly participate in the decision making on policy matters in relation to operation and maintenance. They safeguard the objectives of the project.

7.6 NGOs

NGOs could assist in the participatory process and social mobilisation activities on behalf of the implementing agency. Also in the area of training and capacity building the NGOs could provide assistance.

8 FACTORS INFLUENCING THE DISTRIBUTION OF RESPONSIBILITIES

The implementation of the principles defined in the NWPo and further specified in other documents such as the BWDB Act 2000 and Guidelines for Participatory Water Management (GPWM) requires the BWDB to take up new responsibilities. Under the new mandate, for example, the BWDB has to ensure public participation and stakeholder involvement in all stages of the project cycle. For sustainability of its activities the public participation has to be institutionalised, through the formation of WMOs and their capacity building.

This will have consequences for the role the BWDB is playing in the field and the way it is structured (the current ongoing re-organisation of BWDB is not based on the National Water Policy and new BWDB Act, 2000 and Guidelines for Participatory Water Management). It might further affect the staffing (strength as well as job descriptions) and the knowledge and skill the staff require.

The change in policy, which in effect implies a shift in the functioning of the BWDB from a construction oriented agency to a participatory water management development agency, means that the following aspects have to be addressed:

- Need for the institutionalisation of participatory water resources management in the BWDB. This is one of the overall goals and overriding consequences of the new policy, which has to be achieved.
- Need to ensure integrated management. The activities at field level have to be functionally integrated through the planning and implementation of integrated water resource management plans, thereby avoiding duplication of efforts, waste of resources and inconvenience to the local communities. This requires effective internal cooperation within the BWDB as well with other organisations and line departments working in the sector.
- Need for the establishment of multi-disciplinary planning teams. In order to establish integrated participatory water resources management plans it is required to increase the coordination and cooperation in the BWDB and team based management has to be promoted and adopted.
- Need to address social organisation and capacity building of local institutions. In order to involve local communities in the management of water resources they have to be organised and mobilised. This probably means that a special unit within BWDB has to be created that caters for the promotion and supervision of the participatory approach.
- Need for decentralisation of planning and authority. In order to come to participatory management, involving the relevant stakeholders, the authority and attendant responsibility and accountability has to be taken to the grass root level, through the adoption of a decentralised planning approach and the promotion of local community participation in planning, implementation and monitoring and eventually in cost sharing.
- Need to redefine and reorient the role of BWDB towards advisory functions. Instead of implementing O&M activities, the BWDB staff has to facilitate and advise the water management organisations in the operation and maintenance of water management structures.

- Need to address gender and gender related issues. In order to involve the female community members in water management activities, gender concerns relating to integrated water resource management have to be addressed through the mobilisation of the female population at community level and inclusion in WMOs. This has to be followed by enhancing and building their capacity for water resource management activities. For this purpose suitable female staff has to be available at various levels within the BWDB.
- Need to introduce and decentralise (participatory) monitoring and evaluation. The introduction of participatory, integrated water resource management requires the introduction of a participatory monitoring and quality assurance system that is used as a tool to enhance professionalism, performance orientation and accountability at various levels. Apart from the regular progress reports, the system will have to allow for reports on impact and effect through the involvement of beneficiaries as well as BWDB staff.
- Need for the inclusion of new disciplines with proper career planning opportunities in the BWDB ranks.
- Need to address training and human resource management in the BWDB. In order to execute the new approach the BWDB's own capacity has to be enhanced. This means that an effective training and staff development system has to be in place for the available staff as well as for newly recruited staff. Apart from the BWDB's internal needs the training system has to focus on the capacity development of WMOs and LGIs.

In the following chapters the proper response to these needs will first be analysed in the context of IPSWAM (both at DP III and Zonal levels) and thereafter in the context of BWDB as an institution.

ASSESSMENT OF CURRENT INSTITUTIONAL SET UP

Introduction

The proposal for the re-organisation of BWDB was made in 1998 and approved in 1999, before the National Water Policy (1999), the new BWDB Act, 2000 and Guidelines for Participatory Water Management (2000) were approved. The proposed reorganisation was mainly an exercise to reduce the number of staff in the BWDB and additionally an attempt to restructure the board and improve its staff mix. As a major outcome the reorganisation included a gradual reduction of the staff strength from 18,032 to 8,860 persons. Furthermore, it was decided that the Department of Land and Water Use (DLWU) of the Board would be phased out through a process of natural attrition. After several discussions it was agreed that only 82 officials would remain and they would be incorporated in the newly created Directorate of Water Management (DWM); either directly under the Chief Water Management or deployed to other offices under deputation. According to current projections, all the remaining officials of the DLWU, now on retention till their attrition, would phase out by the year 2006. Additionally, the Board Secretary would be abolished; new staff positions for sociologists and fisheries, forestry and environmental experts would be created and the designation of Chief Engineer Planning and Chief Engineer Monitoring redesigned to Chief Planning and Chief Monitoring respectively. The latter would suggest (as stated in the WMIP project documents) that these positions could also be available for the promotion of “non-engineering” staff. Although several positions were created only a limited number have so far been filled.

Based on the reorganisation plan the functions and job descriptions have been outlined in a document prepared in 2001. A review of both the documents reveals however that they hardly fulfil the requirements and new responsibilities of the BWDB with regard to a multi-disciplinary focus and a participatory approach as defined in NWPo and GPWM. Since both documents have very limited explanatory text, it is very hard to find the reasoning or basis for the suggested changes. This also relates to the newly created posts, their number and placement in the different units.

IPSWAM has addressed the issue and resolved possible shortcomings in the current structure through the formation of the central and zonal planning teams.

9.2 IPSWAM's Central and Zonal Planning

In IPSWAM the central planning team has been placed in the BWDB under the Directorate of Planning III (DP III) with the aim of supporting its planning capacity. This as such is logical, since the planning wing has, (according to the recently set functions and job descriptions) as its role amongst others: undertaking activities for the formulation and preparation of planning documentation for BWDB projects; micro planning for water resources development consistent with the national Water Policy and within the context of the National Water Management Plan (BWDB is entrusted with micro planning whereas WARPO is responsible for macro planning).

IPSWAM is also mandated to strengthen the planning capacity at regional and local level and implement some of the plans in line with the NWPo and GPWM, through the establishment of Water Management Organisations. The planning wing does not have field units and most of the field activities are implemented under the O&M directorate. Therefore the zonal planning teams in IPSWAM are working under this directorate and are under the administrative control of the zonal Chief Engineer (O&M) and under the technical control of Director DP III. Since the planning wing and the O&M wing are basically independent units within the BWDB one could, based on the above, raise the following questions:

- Has IPSWAM been properly placed in the BWDB;
- Is this split of control at zonal level functioning properly;
- Where should the responsibility for planning be resting in the future?

The decision for the placement of IPSWAM under DP III has probably been made on the following considerations. Integrated water resource management planning requires the involvement of multidisciplinary teams. DP III already has experience with the guiding and management of multidisciplinary teams for feasibility studies that were mainly carried out by third parties (consultants and or NGOs). DP III further is one of the few units in the BWDB with some staff from disciplines other than engineering. This was a result of the reorganisation proposal that was prepared in 1999 in which an attempt was made to increase the number of disciplines in the planning directorates. Apart from the engineers, other positions were created to allow entry for agronomists, soil scientists, economists and sociologists. There were also specialist positions for fisheries, forestry and environmental professionals foreseen in the so-called fisheries, agriculture, environment and forest division under the planning department. Although several posts were created, only very few of the positions have been filled and are present in DPIII.

Furthermore, DP III has been the implementing agency of various other bilateral projects and a new project could benefit from the experiences from the past. DP III was also aware of the Dutch project management and reporting procedures. Finally, IPWAM is a ‘path-finder’ project and if placed in DP III could make a quick take off for the reasons already given; it could then, on the basis of the experience gained, give suggestions for the development of similar projects and the continuation of activities into the future.

The coordination and cooperation between head quarters and the zonal offices so far goes well although it may be too early to make a final judgement. Regular interaction between the zonal Chief Engineers and the IPSWAM team is taking place.

With the introduction of the participatory planning methodology in IPSWAM or the Project Scheme Cycle management as foreseen in WMIP there is no distinct divide between planning and implementation. The methodology developed so far consists of six phases, namely selection of areas for project interventions, data collection, WMO formation, plan formulation and finalisation, plan implementation, and operation and maintenance transfer, including monitoring and evaluation. All activities of IPSWAM deal with the rehabilitation of already existing projects and no new plans are foreseen. This has implications for the institutional set up and functions and responsibilities of the organisational units of the BWDB.

There may ultimately be a need for a new divide in planning roles in such a way that the planning Department is involved in planning of new schemes whereas O&M (assisted by planning teams) is involved in the planning process for the rehabilitation of existing schemes. This would be in line with the structure and set up that has been proposed for WMIP where the PCU is placed under the Chief Engineer O&M at Dhaka. The “Zonal Support Pools” in this project will be working under the Zonal Chief Engineer O&M.

In conclusion it could be stated that IPSWAM as path-finder project was properly placed in DP III. In the long run, this unit should remain responsible for the planning of new projects, while planning the rehabilitation of existing projects would be the main responsibility of the O&M wing supported by zonal planning teams.

9.3 Staff Mix in IPSWAM

The participatory planning approach for integrated water resources management as adopted by the BWDB through the NWPo and GPWM calls for the introduction of new competences in the organisation. This is especially the case in the planning process, which requires the involvement of multidisciplinary teams. As a consequence the need for bringing the following types of expertise together in the IPSWAM planning teams was foreseen: irrigation engineering, sociology and community development, agronomy, and economy.

This would be achieved through the placement of an Executive Engineer, a Hydraulic Engineer (SDE), a Civil Engineer (SDE), an Environmentalist, a Sociologist, an Economist, an Agronomist and a Computer Specialist, supported by TA staff in the central planning team. At present all these positions, with the exception of the sociologist (who is on study leave) are filled.

The zonal planning teams would, as proposed in the project document consist of an XEN, an SDE, a Deputy Chief Economics, an Assistant Chief Agriculture, and one or more Extension Overseers; all from the BWDB, supported by two Socio-economists, a Trainer and 2-4 Community Organisers from the technical assistance. In the Inception Report it was mentioned that the Deputy Chief Extension Officer would replace the originally envisaged post of Assistant Chief Agriculture.

The zonal planning teams are not yet up to full strength. The executive engineers (planning) who were expected to be the coordinator of the zonal teams have not been appointed yet. The placement of an XEN in the planning team is a way for the planning directorate to undertake decentralised planning and to respond to the need for “regionalisation of BWDB” as it is mentioned in the vision document. It is furthermore a step towards strengthening the planning capacity of the Zonal Office.

In the absence of the XEN in zonal the planning team, the XEN of the relevant Division is at the moment relating to the work of the zonal planning team. This means that the divisional XEN is aware of the activities of the IPSWAM planning team and has regular coordinating meetings with its members. A mechanism for this type of coordination has just been established.

The Deputy Chief Extension Officers, based in Jessore and Barisal respectively, have taken the place of the originally foreseen Assistant Chief Agriculture as member of the zonal planning teams. Considering that the extension services provided by these officers related mainly to agricultural activities, and also the vast experience of the respective persons in previous participatory projects under the BWDB, this is a good alternative. A drawback however is that both are not full time available for IPSWAM activities, which may affect the work of the planning teams. The Deputy Chief Extension Officers are mainly playing a key role in the community development process and are guiding the extension overseers in the formation of WMOs. In this context it is possible that the role of agriculture in the planning process for new sub-projects may not get sufficient attention, and this should be reviewed with adjustments if and when required.

In the proposed set up of WMIP the responsibilities regarding agriculture and community development are provided by a Research Officer Agriculture who has been included as a member of the planning unit and a CDO as member of the Community Development Unit of the Zonal Support Pool (See figure 5).

It is anticipated that the each zonal planning team assists a specific Divisional XEN in the development of a rehabilitation and O&M plan for a polder. Once the plan has been approved the

divisional XEN is responsible for its implementation and can request the CE for additional specialist input from the zonal team if and when required.

In the mean time the members of the zonal planning team start their planning activities in another polder. Although this will be feasible for most of the members of the team there remains a need for the Extension Overseers and/or Community Organisers to continue working in the first polder in order to strengthen the WMGs and WMAs and assist them in their organisational development. At the same time these persons will be the initial interface between the WMO and the BWDB. It is thus anticipated that IPSWAM's staff requirement (male and female) for these positions is higher than originally envisaged.

It is further important that the staff working at the community level is mobile and remains mobile when the other members of the planning team have left, to continue their relationship with the WMOs. This means that transport facilities through the provision of motorbikes (including their O&M costs) or alternatively through refunding of public transport costs have to be provided on a long-term basis.

It has been suggested that, apart from the existing disciplines in the planning teams, they should also be strengthened with new competences in the area of forestry and fishery. This would however require a large influx of additional staff and the creation of many new posts, which might not be realistic. It is expected that the environmental expert at central level covers these disciplines, so that integrated plans are prepared. At the same time it is anticipated that at community level linkages are established with the line department who provide these services.

The responsibilities of the zonal planning teams in the planning process lie in the areas of community mobilisation, formation of WMOs, and field investigations and data collection, according to the formats and methodologies developed by the central planning team. The central planning team is at present involved in developing the planning methodologies. Since the project is still in the process of developing the methodology, the exact division of tasks and responsibilities is still being determined, and will be completed in the near future.

9.4 Relationship of IPSWAM Staff with Parent Departments

At the moment staff in the zonal planning teams belong to different wings within the BWDB. The key to the preparation of successful integrated water management plans is the functional integration and cooperation of the various disciplines in the planning team. Apart from a proper understanding of the roles and responsibilities of each member in the team as defined by the planning approach, the line of command of individual members to their respective directorates should be understood and agreed upon.

As mentioned earlier the zonal planning team at present works under the Chief Engineer as a resource pool; they are assisting the Divisional Executive Engineer in the development of integrated water resource management plans. It is anticipated that the preparation of the plan will be coordinated by the XEN (planning) of the planning team in cooperation with the divisional XEN (O&M). Since both officers are of the same level, there could be some friction in this cooperation, especially if the divisional XEN has a higher seniority compared to the XEN of the planning team. Collegiality and a clear understanding of the shared responsibilities of both officers would thus be required to make this operational.

Attention also has to be paid to the working relationship between the DCEO and the XEN O&M, since both are of the same rank but belong to different cadres. The DCEO is an officer of the Water Management Directorate and this post has been retained on a permanent basis under the reorganisation proposal of 1999. The Extension Overseers also belong to this directorate, which

still has its own line command structure. Both now play a vital role in the social mobilisation and community organisation process for which the methodology is being developed. Although it has been suggested that these staff might be placed under the direct control of the divisional XEN, and thus be a member of the O&M staff, this might have some disadvantages in relation to the community development process.

It is, however, strongly recommended that the DCEO becomes full time involved in IPSWAM activities, which would also benefit cooperation with the XEN, as the latter would be more aware of his activities.

Once finalised and approved the implementation of the integrated plan is the responsibility of the XEN O&M, who can still request the assistance of the zonal planning team, or its individual members through the Chief Engineer. Long term support at divisional level will be needed in the area of community development to strengthen the established WMOs and it is therefore suggested that in order to get a clear command structure some community organisers (at the moment Extension Overseers and Extension Officers) may be posted on deputation from the Directorate of Water Management to the office of the divisional XEN and under his administrative control. However, since community organisation is a relatively new activity, requiring specialist supervision and guidance, which cannot yet be carried out by the divisional XEN, others suggest that the administrative control should remain in the own departmental line structure (i.e. with the DWM). The number of Extension Overseers and Extension Officers depends on the number and size of the polders/projects in the division for which rehabilitation plans have been prepared.

At the moment no BWDB post has been created in the zonal planning team in the area of training. However, the TNA carried out by the project showed that there are significant gaps in the capacities and capabilities of the BWDB staff, LGIs and WMOs. This means that extensive training will be required at present but also in the future. It is therefore proposed to create an additional position in the zonal planning team so that the training capability (especially in relation to newly formed WMOs) can be sustained when TA staff are no longer available. In the chapter on capacity building this will be worked out in more detail (See Chapter 9.9).

9.5 Staff Mix in BWDB

As mentioned previously the proposal for the re-organisation of BWDB was made in 1998 and approved in 1999, before the National Water Policy (1999), the new BWDB Act, 2000 and Guidelines for Participatory Water Management (2000) were approved. This means that at present the staff mix and organisational structure is not in line with the current requirements. IPSWAM has therefore formed the central and zonal planning teams in order to address the issue and resolve possible shortcomings in the current structure.

Also in the WMIP project document, measures have been proposed in order to compensate for the lack of capacity in the BWDB, especially in the area of community development. As a result it has been proposed that 7 posts of Community Development Officer at the rank of DCEO will be created under this project, one officer to be posted in each Zonal Office. Their principal job would be to supervise and coordinate community development activities in all the Divisions under their jurisdiction. Similarly, 50 posts of Community Organizers (CO) in the grade of Extension Overseers would be created who would be posted at the Divisional level and would be responsible for organization of and support to the WMOs. On basis of the requirement of one Extension Overseer per 2000 ha of area covered it is anticipated that in total 250 persons are required. It is suggested that the officers and Extension Overseers of the erstwhile DLWU, who have already been working on similar jobs and have gained experience, would fill up these posts. Two points require further attention in this regard:

- The proposal does not deal with the provision of female Community Organisers (there are at present only three female extension overseers employed in the BWDB).
- Because of the stop on new recruitments for many years, the age structure of the Extension Overseers is very skewed. As a consequence 144 extension overseers, out of a current strength of 258 will retire in the next 10 years. Apart from the possibility that these employers might not be very interested in developing additional skills at the end of their carrier it might be more cost effective to focus training and capacity building efforts on the relative younger officers.

Similarly, it is suggested that the posts in the Zonal Support Pool will also not be created afresh, but rather staff will be made available from the existing strength of the retention pool.

Finally, it is expected that the posts of all the Research Officers will be filled by recruiting fresh candidates against permanent posts created for this purpose in 1999.

Figure 5. Organisation of the Zonal Support Pool as suggested in the WMIP project document.

<p>Planning Unit <i>BWDB Staff</i></p> <ul style="list-style-type: none"> 1 x XEN 1 x SDE 1 x Research Officer (Eco) 1 x Research Officer (Agri) 1 x DEO 1 x MLSS 	<p>Community Development Unit <i>BWDB staff:</i></p> <ul style="list-style-type: none"> 1 x CDO 1 x DEO 1 x Driver 1 x MLSS <p><i>TA Staff</i></p> <ul style="list-style-type: none"> 2 x Socio-economist 1 x Trainer 1 x Jr. Professional Staff
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Although both IPSWAM and WMIP are not intended to initiate a reorganisation of the BWDB, the organisational set up and mode of implementation of these projects may raise some questions for the future operation and structure of the BWDB.

Although the GPWM imply that NGOs will mainly carry out the participatory process and social mobilisation activities on behalf of the implementing agency, the set up of both projects suggests that the organisation and management of community organizations would form an important part of the future work of the BWDB. This is based on previous experience, which shows that excessive reliance on NGOs for community organisation and participatory approaches can be detrimental for their long-term sustainability.

The WMIP documents identified further bottlenecks based on past experiences with regard to NGO involvement in water management projects:

- Few NGOs have technical knowledge and experience with water resources management, and especially with management of FCD schemes.
- NGOs mostly see their mission as focusing on a specific target population, rather than entire population in hydrologically defined areas.

- NGOs are not the right type of organisations to mobilize and guide elected LG office-holders. In the case of WMIP it means that wherever capable NGOs exist that are willing to support its efforts to establish and strengthen WMOs, these may be contracted.

Otherwise, for community mobilisation both projects mainly rely on the staff of the former DLWU now the Water Management Directorate. For this purpose the former extension staff currently on retention will be trained so that they acquire the required skill to perform as community development staff. Thereafter, they will be redeployed on a permanent basis, thus creating a new specialist function in the Board.

Although the structure of this group of specialists has not yet been determined (at present the following officers are involved or due to be involved: Extension Overseer/Community Organiser; Deputy Chief Extension Officer; Community Development Officer) it is clear that they will have their own line hierarchy, similar to that of the former extension officers. In the light of this development it might be useful to create a specialised unit for these and other remaining DLWU officers by renaming the Water Management Directorate (possibly not the most appropriate name, since the whole BWDB is now engaged in water management) into something like “Community Organisation Directorate”.

Newly appointed staff to this unit who are working in the area of community organisation would require social sciences as area of study, if possible in combination with agriculture in order to qualify for entry in the BWDB.

For the officers who are part of the future zonal planning, or community organisers working at divisional level, the creation of a specialised directorate might mean that they would either be part of the water management directorate/ community organisation directorate working under the administrative control of the O&M field offices or under the control of the superior officer of their own directorate.

As mentioned earlier in relation to IPSWAM it is important that the staff working at the community level is mobile to establish the WMOs and continue regular contacts with them once established. This means that the BWDB has to provide proper logistical support to the staff working at the field level on a long-term basis.

9.6 Relations with Government and Other Agencies

9.6.1 Need for Cooperation with other Water Related Agencies/Organisations

A better management of water resources would require improved cooperation between major water sector organisations and related agencies. In particular, cooperation with the Roads and Highways Department (R&HD), Local Government Engineering Department (LGED) and Bangladesh Inland Water Transport Authority is important. The activities of these organisations, such as construction of highways and rural roads, digging of canals and dredging of channels for navigation have a direct impact on the hydrological regime. For example, narrowing of channels while constructing bridges/culverts reduce the carrying capacity of rivers and streams, an important factor causing floods. Road constructions without providing cross drainage facility also contribute to flood. Any intervention in the hydrological regime should keep the overall situation in view.

Furthermore, projects designed and implemented by the BWDB without proper consultation with related agencies such as the Department of Fisheries, Environment, Forests have occasionally had a negative environmental impact. Better cooperation with these organisations, from the planning to the implementation stage, will result in (i) better designed projects with no or less

negative environmental impacts and (ii) a large saving in investment costs in those instances where structural components can be combined. For example, an embankment constructed by BWDB could be designed as road cum embankment, regulators could be made as fish friendly structures; sluices could be built as bridge-cum-sluice.

An integrated participatory planning methodology as to be developed by IPSWAM is planned to incorporate these aspects in the preparation and execution of the final water resource management plan. This assumes that the BWDB maintains close linkages with other ministries through the Ministry of Water Resources and horizontal linkages with other line departments at central and field level. The GPWM states in this respect that the concerned implementing agency for the water resource development project will take the initiative to ensure necessary coordination and cooperation with other public sector agencies. The inclusion of other line agencies in IPSWAM occurs mainly through informal personal contacts with officials working in other departments. Formal linkages and cooperation and collaboration mechanisms are however limited. Initiatives may be considered to develop more permanent relationships.

At District and Thana level, development coordination committees have been established to coordinate the activities of various government departments and agencies in all stages of the project cycle and to ensure that these reinforce each other or at least do not compete with or frustrate each other. In the meeting of the District Development Coordination Committee, under the chairmanship of the Deputy Commissioner, all the line departments provide detailed information on their ongoing projects and activities and discuss possible constraints. Since the XEN attends these meetings as representative of the BWDB, this can also be the forum for coordination of water resources related activities between BWDB and other line agencies, expanding the agenda of this forum by allowing this type of cross-sectoral coordination to become part of the mandate. Alternatively, a separate Water Management Coordination Committee could be formed at this level consisting of representatives of the relevant departments and agencies.

At the national level, a Memorandum of Understanding (MoU) between the BWDB and the DAE has previously been prepared and signed in 1994 (see Annex III). It describes the roles and responsibilities between the BWDB staff (in particular LWUD staff) and the extension staff of the DAE and sets out the coordination mechanisms. In addition to DAE, linkages with other departments such as the DoF and DoE could be established in a similar fashion. (A MoU between the BWDB and Department of Forest relating to afforestation on BWDB embankments and lands exists as well). This would allow the officials of BWDB, DAE, DoF and other relevant departments, to work together, particularly at the field level, to coordinate their activities. This could lead to strengthening of the WMO's (see Chapter 9.7), minimizing negative environmental impacts and maximizing the benefits through collaboration and joint activities.

9.6.2 Cooperation with LGIs

According to the GPWM, LGIs will provide supporting, facilitating and co-ordinating assistance to the water resource management activities. For this purpose the Union Parishad chairperson serves as advisor to the WMO in his/her jurisdiction. Involvement of the LGI representative in the planning and implementation of water management activities on behalf of a WMO smoothens its relationship with the district administration and contributes to an improved relation with other line departments. The LGI representatives also play a role in conflict resolution, since their leadership is in many cases well respected.

Based on the above the IPSWAM planning teams are in the process of establishing lasting relationships between the LGI representatives, the WMOs and BWDB by involving them in the

planning process. The possible benefits and modalities of such a tri-partite relationship are being realised gradually and awareness and capacity building activities are therefore being developed which will highlight this topic.

9.7 Relationship with and Strength of WMO's

There have been instances in which a project completed by BWDB failed to achieve the desired benefits and the O&M of the project was not sustained, resulting in rapid deterioration of the infrastructure. The absence of beneficiaries' participation has been identified as one of the main reasons for poor performance of completed projects and the unsatisfactory level of operation and maintenance. BWDB's relationship with its local stakeholders is thus of utmost importance. In order to come to integrated participatory planning and implementation of water resource management plans, the community members are organised in WMGs and WMAs. Until now IPSWAM has so far established 46 WMGs and three WMAs.

The methodology used for the establishment of the WMG's and WMAs is still under development and goes through a learning by doing process i.e. readjusting the approach if necessary, based on experiences obtained. It is therefore much too early to review the methodology used or judge the strength of the organisations formed. The enthusiasm, commitment and ideas that were found by the members of the WMGs and WMAs suggest that the project is moving in the right direction.

Below a few observations will be made based on some principles of integrated participatory water resource planning:

- **Participation:** All the interest groups are involved in planning for the future 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; people organize round a common interest.
- **Agreed distribution of rights, concessions and obligations:** All interest groups should negotiate with each other and agree on who will do what, where, and when and how work and 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 of neighbouring areas. Therefore all water resource related activities have to be analysed and planned in an integrated manner.
- **Gender Specific:** 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.

For a WMO to gain legitimacy and authority at community level it is important that the process in which it has been established has been transparent and the organisation that has been formed represents all stakeholders so that the villagers can identify themselves with the organisation. At present WMGs are formed at village level and WMAs at polder level. Currently it is estimated that the WMGs represent on average 60% of the villagers from all existing sections (including an average 40% women).

The WMAs are constituted through the election of two representatives (one male, one female) from each WMG. This procedure is in line with the prescribed method in the GPWM, and is based on the Cooperative Society Act. Guaranteeing representation of the identified categories of stakeholders (farmers, fishermen, landless and destitute women) in the WMGs may influence the choice of representatives, and this is being considered as the methodology is refined. Registration as a legal entity of the WMOs in general is considered important for their future sustainability and may be a requirement for their taking over full management responsibilities. IPSWAM already coordinates with the Committee for the formulation of WMO registration rules, established in the BWDB and intends to play a constructive role in this, based on its experiences.

Social mobilisation and community organisation are processes, which require sufficient time and skills. The Extension Overseers require additional capacity and skills in this area to perform the role of community organisers; there is further a need to have sufficient permanent female staff to mobilise the women.

Proper representative groups are formed at all levels where decisions concerning integrated water management planning take place i.e. at each planning unit, which should be identifiable by unique boundaries. This is indeed the case at the village and at the polder level. It has been suggested that 'blocks' might also be used as an intermediate level for water management and informal sub-groups could be formed under the WMA involving the relevant representatives for this purpose.

Proper representation provides legitimacy and authority to the organisation. Real authority however comes when the organisation proves to the villagers that their existence makes a difference with regard to improvements in integrated water resources management. Here the term integrated water resource management is stressed, as this is more than just water management. A WMG will ultimately gain strength and authority if it is used as entry point for related activities and developments provided by other institutions and departments (e.g. agriculture, fisheries, forestry, etc.) in addition to its primary activity. The formation of parallel organisations for these activities in the same village as is happening frequently, since participatory approaches are also common nowadays in other departments, undermines the authority of the existing organisation. It is therefore important that working relationships with other line departments are established, so that the community organiser or other members of the planning team can interact with officials of other departments who provide their services in the same area.

Another determining factor in the credibility of the organisation is that the BWDB allows the WMO to play its role and starts considering it as an equal partner in the planning process. This means that a partnership relation built on trust and equality needs to be established between WMO and BWDB. One of IPSWAM's tasks is to develop the terms of such a partnership agreement and identify the role of BWDB and other stakeholders in it. Also with regard to the handing over of O&M responsibility to WMOs proper guidelines and procedures are being established.

The IPSWAM planning teams are at the moment part of the interface between the BWDB and the WMO as they are currently involved in establishing the relation between both parties. This is, however, a temporary situation as proper procedures are developed, new working modalities established, so that the approach can be institutionalised in the BWDB.

9.8 Gender

9.8.1 Existing Policies and Strategies

Experience has shown that wherever women have been actually involved in water management programmes, the outputs of these programmes have been more positive and the sustainability improved. The National Water Policy makes in its objectives specific reference to the needs of women with regard to water availability, to the important role of women in water management and to the requirement for the inclusion of gender equity in the design of future water resources management plans. The Guidelines for Participatory Water Management stresses the need for the inclusion of all stakeholders (both men and women) in the various stages of participatory water resources management. The guidelines do not specifically relate to gender and gender mainstreaming nor do they provide details on how to ensure gender equity in the development of water management plans. Both documents however have created an enabling environment to reconsider the role of the BWDB in relation to gender and gender equity. The latter has recently been addressed in the draft Gender Equity Strategy, which aims at describing the process and related actions that are needed to ensure that all the BWDB's programmes and activities address the gender equity issues.

9.8.2 Gender in IPSWAM

The Project Document of IPSWAM does not have a separate chapter on gender and does not address this issue specifically. However, the Inception Report addresses gender and states that IPSWAM is committed to ensuring gender mainstreaming and women's participation. This involves incorporating and disseminating the concept of gender in the activities of IPSWAM, taking into account the aims and objectives as outlined in the project document, the inception report, the NWPo and GPWM.

It goes without saying that the role and commitment of the BWDB in addressing gender is critical for the success of IPSWAM's gender plans and proposals. Gender mainstreaming in BWDB entails addressing gender issues in all organisational structures and activities. It tries to achieve fair and balanced distribution of roles and responsibilities between men and women in all aspects of work and in all stages of implementation from water policy to the design, planning, implementation, operation and maintenance, monitoring and evaluation of water management schemes. At present a proposal and implementation plan is being prepared, which will be the basis for future action.

Three levels can be identified at which gender mainstreaming can be focussed, namely the institutional level, the level of training and capacity building and the level of field implementation.

Institutional level:

As mentioned above, the National Water Policy calls explicitly for the participation of women in water management. Some projects have so far included a women-in-development component in their programme, in recognition of the importance of the productive role of women and in pursuit of a more equitable distribution of project benefits. However, this has in many cases resulted in an ineffective programmatic approach, where women's activities have been isolated from the rest of the project programmes, turning into add-on activities generally undertaken in an ad-hoc manner. This has further resulted in interventions considered beneficial for women, instead of a focus on activities, which will also contribute to serve the higher objective of integrated water resources management. IPSWAM is developing a planning approach, which integrates gender

into the mainstream activities. It is expected that the BWDB (with the assistance of the project) will incorporate this approach in its policies and programmes of water resources management and development.

Active participation of women, in all aspects of planning, implementation, operation and maintenance and subsequent monitoring and evaluation activities requires the development of an interface with them at the community level. As the prevailing cultural and religious norms prohibit men and women to interact and speak easily to each other, this has been addressed through the placement of women at relevant positions in the IPSWAM planning teams. At present there are female socio-economists and female community organisers actively participating in the zonal planning teams.

At present only 5.5 % of the 8860 posts approved in the BWDB reorganisation proposal are held by women. This percentage is below the 10% quota stipulated by the GOB. Female representation is highest (7.5 %) in the low Class IV level staff and stands at 2.6 % of the high Class I posts. Another important observation is the fact that although most of the BWDB activities are field related, most women posts are Dhaka based and there are hardly any women holding field positions. This is a critical issue that needs to be addressed, if the BWDB wants to institutionalise integrated participatory planning in the future. This particularly relates to the specialised functions in the areas of community organisation and training and capacity building, where positions held by women are essential. The IPSWAM project document prescribes that 35% of the newly recruited staff for the planning teams are women, and at the level of community organisers it is mentioned that at least 50% will be women. While this is currently the case, at present there is insufficient experience to judge whether these percentages are indeed required and feasible in the post-project situation.

It is worthwhile mentioning that in the WMIP documents no mention has been made of the number of female staff required as community development organisers. This probably means that appointments for these positions will be made on the basis of merit from interested candidates (respecting the quota of at least 10% for women as per government procedure). This might result in a less than optimal situation and it is therefore suggested that a certain number of community development positions are reserved for women.

With the incorporation of additional positions for women comes the creation of an enabling environment for enhancing the effectiveness and efficiency of female employees. The BWDB should further address this through the facilitation of support to its female workforce through the provision of requisite facilities, such as toilets. The recently prepared Gender Equity Strategy gives an overview of additional activities that should be taken up in this area.

Gender mainstreaming will also require adjustment of the BWDB's operational procedures, policies and rules and regulations. It further needs the production of disaggregated data in all its planning and monitoring documents.

Capacity building and training level:

It is necessary to promote activities which orient both men and women towards their new role and which create an enabling environment for women to be meaningfully involved in WMOs. Awareness raising, capacity building and training are thus important areas that are being addressed to achieve gender mainstreaming. Three avenues can be identified at which these activities could take place, namely in IPSWAM; in the BWDB as a whole and at community level.

In general organisational change will only take place if it is sufficiently supported from within the organisation (especially at the senior and leadership positions) and this is also the case for

gender. The arguments for and importance of the inclusion of gender should ideally be generated from within the organisation itself. Gender orientation and sensitisation is therefore being imparted to the IPSWAM staff (a first session took place on 26 July 2004) as well as to selected non-project staff of BWDB. An adult learning process based on learning from experiences and focussing on training of trainers is being adopted by IPSWAM.

The Training Needs Assessment carried out by the project identified gender awareness as one of the priority areas for training for BWDB, WMOs and LGIs. Training in combination with awareness raising, information campaigns, community organisation techniques and strategies is an effective tool in changing the attitudes and behaviour of community members and WMO and LGI representatives.

While preparing training materials and modules special attention has been given to a proper gender balance. This is also true for the attendance in the training sessions to be implemented and the ability of women to attend the training sessions is taken into account when planning them.

Field level:

In order to achieve the effective participation of women in water management IPSWAM has as one of its activities the development of gender-specific methodologies. The planning approach and methodology are gender specific, in that they require the involvement of both genders during data collection, verification and planning in a participatory manner, and require the establishment of WMOs in which both men and women are represented. This means that gender disaggregated data are collected and reflected in monitoring documents, in capacity-enhancement plans and other reports. Gender-disaggregated data reveal the real status of gender mainstreaming and allow for deficiencies to be corrected.

At the moment 46 WMGs have been established in the initial three polders where IPSWAM started its activities and in addition to this WMAs have been created in all of them. The existing WMGs have a good representation of women and it is estimated that on average 40% of the WMG members are female. The project is now ensuring an atmosphere in which they will be able to participate actively in the roles envisaged for them. At the moment every WMG has a male and female representative in the WMA, although special efforts may be needed to maintain this if the WMG and WMA opt to be registered under the Cooperative Society Act.

With regard to the implementation of activities the GPWM stipulate that 25% of earthwork should be reserved for LCSs, including landless male and female groups. At least 30% of the LCS groups or 30% of the LSC members will be women. The most frequent way of involving women in earthwork is through the establishment of a separate LCS. So far the project has established four LCSs two of which consist entirely of women. It is worth noting that, because of differences in output, there exists a significant difference in wages between male and female LCS members.

As mentioned earlier an enabling environment has been created and support provided to female staff working in the field. This means that in future the BWDB may have to create conditions for female staff deputed at field level that enables them to indeed work and live in the field areas, such as suitable residential accommodation and separate toilet facilities. The adoption by the BWDB of a decentralised participatory planning approach further means that the mobility of the staff (both male and female) may need to be improved. This can be accomplished through the provision of transport i.e. a car for higher cadre field staff and a motorcycle or a mobility allowance covering the expenses incurred on the utilisation of public transport facilities for the lower level staff.

The male and female members of the planning teams go to the field together and operate as a team so that they can share their experiences, knowledge and capabilities (technical, and social economic) and trigger discussions amongst themselves and with community members. These discussions contribute to a better understanding of the local problems and opportunities and thus give an input in the formulation of optimal water management plans.

9.9 Training/Capacity Building

The overall objective of the training in IPSWAM is to assist the BWDB in its capacity building in order to carry out efficiently its defined roles and responsibilities in relation to the NWPO and the GPWM. Training is being given to the BWDB Planning team members at central and zonal level and to the WMOs and the LGIs in the polders where IPSWAM implements its activities. Curricula, modules and course materials are being prepared to reorient the target groups and provide them with the required skills and knowledge through different trainings and other support. In this way they are in a position to adopt the new directions of integrated water resources management through a multidisciplinary focus and a participatory approach to decision-making and management. The formation/change of attitudes and corresponding behavior towards teamwork and gender is present in curricula and modules for training and upgrading of staff and other target groups.

For this purpose two TA training posts have been created in the central planning team and two TA trainer positions in each of the two zonal planning teams. A Training Needs Assessment (TNA) has already been carried out and finalised (see IPSWAM Technical Report No.1). Based on the outcome of the TNA a training plan is being prepared and implemented. For the implementation of the training plan an additional two TA trainers will be appointed at zonal level.

The trainer in the planning team is responsible for imparting training, for coordinating the training at zonal level and for monitoring its quality. For specialised training topics the trainer makes use of other members of the planning team as resource persons. Training provided to the BWDB teams therefore includes a 'training of trainer component', already initiated, which enables them to pass on training to lower level staff and to the WMOs.

In the BWDB, training and capacity building falls under the control of the Directorate of Training and Staff Development (DTSD) headed by the Chief Training and Staff Development. The BWDB maintains three training centres namely the Bhagyakul Training Institute at Munshigonj, the Kaptai Engineering Academy and the Baradi Irrigation Extension Institute at Kushtia. In the reorganisation plan of 1999 the staff of these training centres have, however, been excluded from the permanent set up of the department. As the core of the DTSD staff at Dhaka consists mainly of administrative officials, it means that the BWDB has no permanent posts for trainers and instructors in its ranks.

As part of an effort to make use of already available resources the IPSWAM training group visited the Bhagyakul Training Institute and the Baradi Irrigation Extension Institute to assess the suitability of these centres as future venues of IPSWAM training. At the same time the training programmes of 2004-2005 prepared by the three institutes were reviewed. It was concluded that the programmes had been prepared in isolation and not as part of the core programme of the BWDB. They are not based on a TNA related to the change process started in the BWDB and have therefore limited relation to the present needs of its staff.

Development of capacity of WMOs is needed to ensure continued people's participation at all stages of the project cycle and long-term sustainability of the organisations. It is an important activity that includes a substantial amount of training, general support and awareness raising. At

the moment the TA staff together with the BWDB staff coordinate the training, which is provided with the support of central and zonal BWDB staff. There is however no specific BWDB training position at zonal level and it is therefore recommended to incorporate permanent training expertise in the BWDB staff of the zonal teams so that they can continue the institutional development after the project has been phased out.

The decentralisation of training capacity could be provided by the creation of a separated training coordination position at zonal level. This person could be a member of the special training cadre to be developed under the Training and Staff Development Directorate on deputation to the zone. Another option could be to incorporate training responsibility and capacity in one of the existing positions namely in that of the current Deputy Chief Extension Officer or Community Development Officer (according to WMIP terminology). Decentralisation of training to the Zone requires the decentralisation of financial resources as well, requiring a training budget available at the zonal O&M level that could be made available for training implemented through the zonal planning team.

Finally it should be clearly stated that the human resource profile of an organization, the question whether skilled personnel are effectively utilized and retained, form the key to an organization's level of performance. For this reason the BWDB has to consider very carefully the quality of its human resources and conditions and incentives to motivate skilled personnel to stay in the service of the board.

9.10 Monitoring and Evaluation

Since IPSWAM is still developing its Monitoring and Evaluation (M&E) system, it is too early to reflect on the functioning of the system. Based on a review of the existing monitoring system in the BWDB one could however at this stage already indicate what changes will have to take place to accommodate an integrated participatory approach to planning and implementation of O&M schemes and the consequences it has for the organisation. This is briefly outlined in the following paragraphs.

At the moment the monitoring system of the BWDB focuses mainly on the progress made with regard to the implementation of Annual Development Plan (ADP) funded schemes. The monthly progress reports of ADP schemes consist of a number of formats through which detailed information has to be provided with regard to the physical and financial progress of each item of works of the scheme; its design status, stage of the tendering process, approval status of the scheme, the land acquisition status and the financial flow.

These progress reports are drafted at the Sub-divisions, compiled in the Division office and reviewed in the Circle office. The Chief Engineer holds monthly review meetings attended by the XENs and SEs and compiles a final report. The Chief Monitoring compiles the zonal reports for review by the Board and subsequent review by the Ministry at inter-ministerial level. The zonal Chief Engineers and also Chiefs of head offices attend these monthly meetings in which the overall progress of each scheme is reviewed.

Monitoring progress of the O&M works of completed projects that are funded by the revenue budget of the GOB has a lower priority. Monthly progress reports on O&M works are also compiled at divisional level. They are generally sent directly to the Chief Engineer, O&M for review with a copy forwarded to the concerned SE and CE. The progress report only contains the physical and financial progress of each item of work of the schemes. The reports are compiled in the CE, O&M's office and included as a summary in the documentation for the monthly review meetings of the Board and the MoWR where they generally do not get very much attention.

The current traditional role of monitoring is very limited as it only shows whether or not the activities have been carried out according to plan but it does not explain the problems and the processes that influence the implementation and the quality of the products. The system is therefore highly target focused and concerned with the accountability aspects regarding new schemes, in order to justify their expenses and executed activities.

This methodology can be highly misleading for programmes that follow a participatory planning process as they are expected to do in the future. This specifically relates to the implementation of O&M projects carried out with or by WMOs. Targets of expected outputs should be included but the quality of the process and the capacity and awareness of the local community might be of much greater importance from an M&E point of view than the actual and timely achievement of the physical targets.

For example, in relation to new participatory O&M planning and implementation methodology, the quality of the work, the selection criteria of the sites and structures, the cost-effectiveness of the works, and community involvement are important issues that would normally not enter in a traditional target-oriented monitoring system. Instead of waiting for the final evaluation at the end of the project cycle, internal monitoring must point out some of the key issues that should be addressed during project implementation. Through the monitoring process, issues can also be identified that should be included in the evaluation exercises.

Figure 6. Comparison between traditional and modern monitoring.

Issues	Traditional monitoring	Modern monitoring
Purpose	Control, accountability	Institutional learning, to improve planning and implementation
Topics	Execution rate compared to plan: activities, expenditures, targets	Execution rate Processes/problems that influence implementation Quality of activities and outputs, capacity
Result	Occasionally improved figures presented for the benefit of superiors, donors, etc.	Better understanding of programme strengths and weaknesses

The modern type of monitoring increases the knowledge of the BWDB and WMOs and becomes a means of institutional learning (see Figure 6 above). Accordingly, the role of M&E is not considered to be that of a control instrument but primarily a mechanism for improved planning and implementation of the programme in cooperation with the stakeholders. Different stakeholders at various levels are involved in M&E, i.e. WMOs members, project staff and BWDB staff at a range of levels. The main users however, are the people who are most directly involved in the implementation of the system, i.e. field staff and project implementers. It means that the stakeholders must be prepared to undertake a critical self-analysis and not be afraid to show disappointing results if these might appear.

The whole idea of monitoring should be to stimulate debate in order to improve the programme. In short, monitoring should not be considered to be a control system, but more a learning and knowledge-building system. In conclusion, monitoring should include, among others, the following aspects:

- Implementation progress: activities carried out and outputs (targets) achieved as compared to the plan.

- Quality of the implemented activities and achieved outputs.
- Processes: factors that influence the programme implementation.
- Expenditures, not only as a basis for auditing but also for the purpose of monitoring unit costs of activities and thus cost efficiency of operations.

With the shift to a more participatory approach towards O&M, especially the community members must be directly involved in the M&E process. This means that the stakeholders should not only be involved in the execution of activities but more importantly in:

- Identification of problems;
- Prioritisation and planning of the activities to be implemented;
- Monitoring and evaluation of the activities;
- Decision-making process for re-planning or making adjustments to the intervention.

The BWDB has a facilitating role in this system and is thus more than just a purveyor of technical messages on scheme construction. Obviously, there is still a need for technical input but this should not dominate the decision-making process. This includes the staff working at field level who are in regular contact with the WMOs (the planning team members and (sub-) divisional staff) and who should obtain the capacity and skills to facilitate the monitoring process, with these tasks included in their job descriptions.

For the organisation it entails decentralisation of decision-making power and this should lead to improved accountability and transparency. Efficiency may be improved if the system is computerised and an approach to this has already been developed in the O&M wing of the BWDB. Monitoring data thus compiled at the field level would still have to be forwarded to and reviewed at the central level where they become part of the overall MIS system of the BWDB.

9.11 Change in BWDB's Organisational Culture

The new participatory and multidisciplinary working arrangement requires a new approach to working in the BWDB, as in this case a joint working approach is required in which several persons from different departments together are responsible to achieve a common goal. So far the working modalities in the BWDB are mainly based on individual responsibilities.

In the BWDB there is little focus on performance and results. The existing organization culture is characterized by a system in which subordinates execute a superior's instructions. The new approach on the other hand requires attitudes, which are not favored by this system. Attitudes and behavior, which are needed, can be characterized as multidisciplinary team working and the taking of initiatives and risks. These attitudes are needed for more than one reason:

- Development of WMOs, formulation of integrated water management plans, monitoring of activities and evaluation of outcomes require the cooperation of various staff of different directorates within the BWDB.
- Participatory, integrated planning requires staff not only to look and listen to their superiors, but also to cooperate actively with those at a higher and lower level within and outside their own department as well as with community members.
- Water resource management plans have to be developed by a team of various specializations, as is at the moment developed and practiced in IPSWAM.

Thus the BWDB has to engage in efforts to change attitudes and behaviour, especially stimulating cooperation and a positive attitude to team work. This will not be an easy exercise for an organization with a majority of civil engineers used to functioning in a centralized manner.

The change in the organisational culture and mode of operation of the BWDB is involving a high level commitment of top management and active support of the mid and junior level staff. The development of multi-disciplinary teams with shared responsibilities will take time. Once established the operationalisation of such a team has to be embedded within the overall framework of the organization.

10. ORGANIZATIONAL CHANGE AND LEADERSHIP ROLES RELATED TO IPSWAM

Organizational change in general goes through four phases that can be characterised as initiation, structural change, functional change and stabilization (See Figure 7). Connected with each phase are different leadership roles. The leadership role that fits to the initiation phase can be characterised as ‘pathfinding’. In the structural change phase the leadership role is ‘conditioning’. In the phase of functional change it is ‘empowering’ and in stabilization it is ‘balancing’. Performance of the right leadership role in the right phase is crucial for the progress of the process of change. If these roles are not or not sufficiently performed potential risks form a threat to the organization. Until now, in the process of change that IPSWAM wants to initiate, the first three leadership roles are most important.

Pathfinding leadership has to ensure clarity of thought and purpose in relation to the intended changes. This role has to bring about clarity and unity of vision among all who are involved. Where shared vision is lacking – this is a potential risk - resistance easily comes in its place. How is the leadership role of pathfinding performed in BWDB and what are the results? In BWDB many higher officials are well aware of the requirements for a new way of working as depicted in the NWPo and GPWM. However, the commitment to the new approach from the lower staff is still reserved, moreover there is limited ownership of the new vision among these officials. Although the policy and guidelines have been shared with them, there has so far been little discussion on what it means for their future functioning. Attention has to be given to the pathfinding role in order to create a shared vision about the necessity and legitimacy of the enterprise.

Conditioning leadership has to create the conditions in which structural changes can be carried out. In IPSWAM the most important structural change implies the formation of planning teams and their operationalisation. The leadership role of conditioning has been well performed so far. Most of the positions are filled and the planning teams are operational.

Empowering leadership is linked to the phase of functional change. Once the leadership role of conditioning has taken care of new structures, it is the leadership role of empowerment that has to bring the new structure into operation by bringing along functional change. The leadership role of empowerment thus has to watch over the application of new methods and procedures and the engagement of new tasks and responsibilities. To make this possible leadership has to ensure:

- design and description of new methods and procedures for participatory water resources management;
- provision of rules of business and job descriptions;
- ensuring that BWDB staff acquire the skills and capabilities needed for the new activities;
- bringing along an organizational culture within BWDB, and organizational behaviour of its staff that are encouraging for participatory integrated water management.

Change of the organizational culture and change of organizational behaviour along with it can only be encouraged when the organizational behaviour of the BWDB officers is characterized by: achievement-orientation, openness to innovations and stimulation of teamwork and self-initiative, responsiveness to women’s participation, decision-making that is decentralized, transparent and more or less open to cooperation with the civil society.

Achievement-orientation means that personal efforts form the basis for the award of authority and respect to an officer. In other words, he/she deserves them by doing a good job.

Openness to innovation and stimulation of teamwork and self-initiative are features that fit in the new approach that depends on teamwork and cooperation.

Responsiveness to women's participation goes hand in hand with the recognition of women's roles in social organization of rural communities and in the participatory preparation of water management plans.

Decision-making in participatory water management is decentralized, transparent and to some extent open to the influence of civil society. So far in BWDB decision-making is centralized, and not highly transparent or open to other influences.

How to encourage a change process:

- *Establish demonstrations and practical examples of the new approach.*
Visibility of efforts and results must be striven for because visible results of progress in one area can have a positive effect on results in another area.
- *Use communication and discussion regarding the new approach as an instrument to initiate change.*
The need of proper and effective communication in BWDB has become manifest in three areas. Firstly, an intensive communication effort is needed to inform especially the lower level staff about the new approach and what it means for their future work. This could be done through workshops and discussion groups. Secondly, communication is needed to make efforts and results of the various changes visible to all involved. Finally, communication is indispensable for promotion and support of the leadership role of empowerment.

Figure 7. Phases of organizational change, leadership roles and potential risks with regard to IPSWAM's implementation.

Organizational Phases	Leadership Roles	Potential Risks
<p>1 Initiation</p> <ul style="list-style-type: none"> • transition from construction to integrated water resource management and development • application of a participatory and multidisciplinary planning approach as described in the NWPo and GPWM • organization of rural communities in WMOs 	<p>Pathfinding</p> <ul style="list-style-type: none"> • formulation of a new methodology to engage BWDB in participatory planning • formulation of new procedures for awareness enhancement, motivation and participation of all stake holders in preparation of water management plans 	<p>Lack of shared visions</p> <ul style="list-style-type: none"> • resistance to change because the belief in its necessity was/is not widespread in BWDB • resistance to participation of poor people on an equal basis and to the institutionalisation of women's roles in rural development
<p>2 Structural change</p> <ul style="list-style-type: none"> • structural change through the formation of planning teams to enable operationalisation of the new strategy and procedures • formulation and review of personnel requirements for new tasks and responsibilities and design of new functions/positions 	<p>Conditioning</p> <ul style="list-style-type: none"> • operationalisation of the planning teams • introduction of group working • staffing of the new functions/positions according to job requirements 	<p>Slow down of progress</p> <ul style="list-style-type: none"> • delay in assignment of new staff • lack of clarity about application of new job requirements
<p>3 Functional change</p> <ul style="list-style-type: none"> • application of new methods and procedures in the preparation of water resource management plans and their monitoring and evaluation • engagement of BWDB staff in new tasks and responsibilities required for the take off of the new approach to integrated water resource management • teamwork and cooperation in order to achieve performance and results in the development and implementation of plans 	<p>Empowerment</p> <ul style="list-style-type: none"> • capacity building of BWDB staff • training at village level of WMOs and LGI members • promotion of new organizational behaviour by teaching of new skills and by passing on role models for BWDB • use of internal and external communication as an instrument for promotion 	<p>Stagnation of change process</p> <ul style="list-style-type: none"> • loss of progress which causes the momentum for successful change to disappear so that the change process stagnates • backfire on the organization and its personnel which causes counter-productive effects; staff will no longer be motivated to engage in or contribute to any kind of new task or responsibility
<p>4 Stabilization</p> <ul style="list-style-type: none"> • embedding of new tasks and responsibilities in the structure and the functioning of BWDB • institutionalisation of the new organizational culture 	<p>Balancing</p> <ul style="list-style-type: none"> • communicate results of the new approach to obtain all over acceptance within BWDB and in civil society • reward pathfinders in change within BWDB 	<p>Backsliding into old system</p> <ul style="list-style-type: none"> • backsliding into old system with lack of ownership of the new approach among part of the staff forming a threat to the embedding of new tasks/responsibilities.

This chapter summarises the conclusions and recommendations for IPSWAM, and the BWDB as a whole, based on the described assessment of the institutional set-up. Apart from a focus on the IPSWAM programme and the Bangladesh Water Development Board, some recommendations are included, which specifically relate to WMIP.

IPSWAM's placement in DP III

IPSWAM as a path-finder project was properly placed in DP III. In the long run, this unit should remain responsible for the planning of new projects, while planning the rehabilitation of existing projects would be the main responsibility of the O&M directorate

IPSWAM's staff mix related to community organisation

In the absence of the XEN in zonal the planning team, the XEN of the relevant Division is at the moment relating to the work of the zonal planning team. This means that the divisional XEN is aware of the activities of the IPSWAM planning team and has regular coordinating meetings with its members. The Deputy Chief Extension Officers, based in Jessore and Barisal respectively, have taken the place of the originally foreseen Assistant Chief Agriculture as member of the zonal planning teams. Both are at present not full time available for IPSWAM activities, which may affect the work of the planning teams. **It is, therefore, strongly recommended that the DCEOs become full time involved in project activities,** which would also benefit cooperation with the XEN, as the latter would be more aware of their activities.

Once the O&M plan for a polder is completed and ready for implementation, the zonal planning team starts its planning activities in another polder. Although this will be feasible for most of the members of the team there remains a need for a limited number of Extension Overseers and Community Organisers to continue working in the first polder in order to strengthen the WMGs and WMAs and assist them in their organisational development. At the same time these persons will be the initial interface between the WMO and the BWDB. **It is thus anticipated that IPSWAM's staff requirement (male and female) for these positions is higher than originally envisaged.**

In order to provide the needed long-term support at divisional level in the area of community development to strengthen the established WMOs, it is suggested that in order to get a clear command structure some community organisers (at the moment Extension Overseers and Extension Officers) may be **posted on deputation from the Water Management Directorate** to the office of the divisional XEN and under his administrative control. However, since community organisation is a relatively new activity, requiring specialist supervision and guidance, which cannot yet be carried out by the divisional XEN, others suggest that **the administrative control should remain in the own departmental line structure** (i.e with the DWM).

It is important in this regard that the **staff working at the community level is mobile and remains mobile** when the other members of the planning team have left, to continue their relationship with the WMOs. This means that transport facilities through the provision of motorbikes (and allocations for O&M) or alternatively through refunding of public transport costs have to be provided on a long-term basis.

Community Organisation in WMIP

Also in the WMIP project document, measures have been proposed in order to compensate for the lack of capacity in the BWDB, in the area of community development. As a result it has been proposed that 7 posts of Community Development Officer at the rank of DCEO will be created under this project, one officer to be posted in each Zonal Office. Similarly, 50 posts of Community Organizers (CO) in the grade of extension overseers would be created who would be posted at the Divisional level and would be responsible for organization of and support to the WMOs. On basis of the requirement of one Extension Overseer per 2000 ha of area covered it is anticipated that in total 250 persons are required. It is suggested that the erstwhile officers of the DLWU and Extension Overseers who have already been working on similar jobs and have gained experience would fill up these posts. Two points require further attention in this regard:

- **The proposal does not deal with the provision of female Community Organisers** (there are at present only three female extension overseers employed in the BWDB; all working in Dhaka).
- Because of the stop on new recruitments for many years, the age structure of the Extension Overseers is very skewed. As a consequence 144 extension overseers, out of a current strength of 258 will retire in the next 10 years. Apart from the possibility that these employers might not be very interested in developing additional skills at the end of their carrier **it might be more cost effective to focus training and capacity building efforts on the relative younger officers.**

Community Organisation in BWDB

Although the GPWM imply that NGOs will mainly carry out the participatory process and social mobilisation activities on behalf of the implementing agency, the set up of both projects suggests that **the organisation and management of community organizations would form an important part of the future work of the BWDB.**

The future structure of the group of specialists involved in social mobilisation within the BWDB has not yet been determined (at present the following officers are involved or due to be involved: Extension Overseer/Community Organiser; Deputy Chief Extension Officer; Community Development Officer). It is however clear that they will have their own line hierarchy, similar to that of the former extension officers. **In the light of this development it might be useful to create a specialised unit** for these and other remaining DLWU officers by renaming the Water Management Directorate (possibly not the most appropriate name, since the whole BWDB is now engaged in water management) into something like “Community Organisation Directorate”.

BWDB's relationship with other institutions and organisations

A better management of water resources would require improved cooperation between major water sector organisations and related agencies. This assumes that **the BWDB maintains close linkages with other ministries** through the Ministry of Water Resources and horizontal linkages with other line departments at central and field level. The GPWM states in this respect that the concerned implementing agency for the water resource development project will take the initiative to ensure necessary coordination and cooperation with other public sector agencies. The inclusion of other line agencies in IPSWAM occurs at the moment mainly through informal personal contacts with officials working in other departments. Formal linkages and cooperation and collaboration mechanisms are however limited. Initiatives may be considered to develop more permanent relationships.

At the national level, a **Memorandum of Understanding (MoU)** between the BWDB and the DAE has previously been prepared and signed in 1994. It describes the roles and responsibilities between the BWDB staff and the extension staff of the DAE and sets out the coordination mechanisms. In addition to DAE, linkages with other departments such as the DoF and DoE could be established in a similar fashion. This would allow the officials of BWDB, DAE, DoF and other relevant departments, to work together, particularly at the field level, to coordinate their activities.

At District and Thana level, **Development Coordination Committees** have been established to co-ordinate the activities of various government departments and agencies in all stages of the project cycle and to ensure that these reinforce each other or at least do not compete with or frustrate each other. In the meeting of the District Development Committee, under the chairmanship of the Deputy Commissioner, all the line departments provide detailed information on their ongoing projects and activities and discuss possible constraints. Since the XEN attends these meetings as representative of the BWDB, **this can also be the forum for coordination of water resources related activities between BWDB and other line agencies**, expanding the agenda of this forum by allowing this type of cross-sectoral coordination to become part of the mandate. Alternatively, a Water management Coordination Committee could be formed at this level with representatives of the relevant departments and agencies. The establishment of such a Committee could be specified in the respective MoUs.

Involvement of the LGI representative in the planning and implementation of water management activities on behalf of a WMO smoothens its relationship with the district administration and contributes to an improved relation with other line departments. The LGI representatives also play a role in conflict resolution, since their leadership is in many cases well respected. The IPSWAM planning teams are in the process of **establishing lasting relationships between the LGI representatives, the WMOs and BWDB** by involving them in the planning process. The possible benefits and modalities of such a tri-partite relationship are being realised gradually and awareness and capacity building activities are therefore being developed which will highlight this topic.

WMOs will gain authority when the organisation proves to the villagers that their existence makes a difference with regard to improvements in integrated water resources management. A WMG will ultimately gain strength and authority if it is used as entry point for related activities and developments provided by other institutions and departments (e.g. agriculture, fisheries, forestry, etc.) in addition to its primary activity. The formation of parallel organisations for these activities in the same village undermines the authority of the existing organisation. As mentioned, **it is therefore important that working relationships with other line departments are established**, so that the community organiser or other members of the planning team can interact with officials of other departments who provide their services in the same area.

The WMAs are constituted through the election of two representatives (one male, one female) from each WMG. This procedure is in line with the prescribed method in the GPWM, and is based on the Cooperative Society Act. Guaranteeing representation of the identified categories of stakeholders (farmers, fishermen, landless and destitute women) in the WMGs may influence the choice of representatives, and this is being considered as the methodology is refined. **Legal status for the WMOs in general is considered important for their future sustainability** and may be a requirement for their taking over full management responsibilities.

Gender

Gender mainstreaming in BWDB entails addressing gender issues in all organisational structures and activities. Active participation of women, in all aspects of planning, implementation,

operation and maintenance and subsequent monitoring and evaluation activities requires the development of an interface with them at the community level. As the prevailing cultural and religious norms prohibit men and women to interact and speak easily to each other, this has been addressed through **the placement of women at relevant positions in the IPSWAM planning teams**. At present there are female socio-economists and female community organisers actively participating in the zonal planning teams

With regard to the BWDB it is observed that although most of its activities are field related, most existing women posts in the BWDB are Dhaka based and **there are hardly any women holding field positions**. This is a critical issue that needs to be addressed, if the BWDB wants to institutionalise integrated participatory planning in the future. This particularly relates to the specialised functions in the areas of community organisation and training and capacity building, where positions held by women are essential.

In the IPSWAM project an enabling environment has been created and support provided to female staff working in the field. This means that in future **the BWDB has to create conditions for female staff deputed at field level** that enables them to indeed work and live in the field areas, such as suitable residential accommodation and separate toilet facilities.

It is worthwhile mentioning that in **the WMIP documents no mention has been made of the number of female staff required as community development organisers**. This probably means that appointments for these positions will be made on the basis of merit from interested candidates (respecting the quota of at least 10% for women as per government procedure). This might result in a less than optimal situation and it is therefore suggested that a certain number of community development positions are reserved for women.

Training / Capacity Building

At the moment no BWDB post has been created in the IPSWAM zonal planning teams in the area of training and more importantly its coordination. However, the TNA carried out by the project showed that there are significant gaps in the capacities and capabilities of the BWDB staff, LGIs and WMOs. This means that extensive training will be required at present but also in the future. **It is therefore proposed to create an additional position for training coordinators in the zonal planning teams** so that the training capability (especially in relation to newly formed WMOs) can be sustained when TA staff are no longer available.

In relation to the BWDB, decentralisation of training capacity could be provided by the creation of a separated position of training coordinator at zonal level. This person could be a member of specialised training cadre, which has to be established under the training and staff development department on deputation to the zone. Another option could be to incorporate training responsibility and capacity in one of the existing positions namely in that of the current Deputy Chief Extension Officer or Community Organisation Officer. **Decentralisation of training to the Zone requires the decentralisation of financial resources as well**, requiring a training budget available at the zonal O&M level that could be made available for training implemented through the zonal planning team.

Monitoring & Evaluation

With the new approach also the role of monitoring and evaluation should change from that of a means to check on physical and financial targets to a tool to stimulate debate in order to improve the programme. In short, monitoring should not be considered to be a control system, but more a **learning and knowledge-building system**. The BWDB has a facilitating role in this system and is thus more than just a purveyor of technical messages on scheme construction. Obviously, there

is still a need for technical input but this should not dominate the decision-making process. This includes the staff working at field level who are in regular contact with the WMOs (the planning team members and (sub-) divisional staff) and who **should obtain the capacity and skills to facilitate the monitoring process**, with these tasks included in their job descriptions. **For the organisation it entails decentralisation of decision-making power** and this should lead to improved accountability and transparency. Efficiency may be improved if the system is computerised and an approach to this has already been developed in the O&M wing of the BWDB.

Change in BWDB

The new participatory and multidisciplinary working arrangement requires a new approach to working in the BWDB, as in this case a joint working approach is required in which several persons from different directorates together are responsible to achieve a common goal. So far the working modalities in the BWDB are mainly based on individual responsibilities. Thus the BWDB has to engage in efforts **to change attitudes and behaviour, especially stimulating cooperation and a positive attitude to multidisciplinary team work**. This will not be an easy exercise for an organization with a majority of civil engineers used to functioning in a centralized manner. The change in the organisational culture and mode of operation of the BWDB is involving a high level commitment of top management and active support of the mid and junior level staff. The development of multi-disciplinary teams with shared responsibilities will take time. Once established the operationalisation of such a team has to be embedded within the overall framework of the organization.

Change of the organizational culture and change of organizational behaviour along with it can only be encouraged when the organizational behaviour of the BWDB officers is characterized by: achievement-orientation, openness to innovations and stimulation of teamwork and self-initiative, responsiveness to women's participation, decision-making that is decentralized, transparent and more or less open to cooperation with the civil society

How to encourage a change process:

- **Establish demonstrations and practical examples of the new approach.**
Visibility of efforts and results must be striven for because visible results of progress in one area can have a positive effect on results in another area.
- **Use communication and discussion regarding the new approach as an instrument to initiate change.**

IPSWAM will in the remaining project period strive to play an active role in these two tasks and thus contribute to the change process.

ANNEX I

Proceedings of the Workshop on the Institutional Analysis Study.

ANNEX II

Written comments received on the Draft Report.

ANNEX III

Memorandum of Understanding between Bangladesh Water Development Board and Department of Agricultural Extension.