

Unlocking the Potential of Coastal Bangladesh

Improving Water Governance and Community-Based Management

SUMMARY

The challenges facing communities that live within Bangladesh's coastal polders are complex. Communities share a collective desire to prevent the breaching of polders during natural disasters, but often their common interests end there. Communities must prioritize water use across different sectors (water for agriculture vs. water for shrimp cultivation, pond fisheries) or within the same sector (drainage vs. irrigation, low land vs. high land). The efficient use of water is of chief priority as communities also frequently cope with prolonged periods of land submergence and drought.

Conflicts regarding water use often involve issues of equity; unequal power dynamics present a challenge to achieving adequate representation of women and other marginalized members of the communities in polder water governance and management decisions. The area's vulnerability to environmental change—in the form of sea level rise, increased salinity, changes in land use patterns, reduced river flows or sedimentation—further complicates these challenges.



CONFLICTING WATER USES BETWEEN AQUACULTURE AND AGRICULTURE

KEY POLICY RECOMMENDATIONS

1. A three-tiered maintenance strategy can effectively prevent lack of maintenance and deterioration of water infrastructure.
2. A revised water governance framework is required to clarify the conflicting roles and counter-productive actions of actors involved in water management.
3. The role of Union Parishads in water management should be formally recognized.
4. Creating sub-hydrological units within the polders can minimize conflicts arising from differences in land elevation.
5. Community-based management should shift from an inclusive approach to a targeted group approach.

EVIDENCE AND ANALYSIS

The project 'Water governance and community-based management' (2011-2014) conducted research in order to: better understand various aspects of water governance and community-based management of polders in the coastal zone of Bangladesh; and recommend implementable policy options for improving polder governance.

Varied and complementary research methods were undertaken. This approach

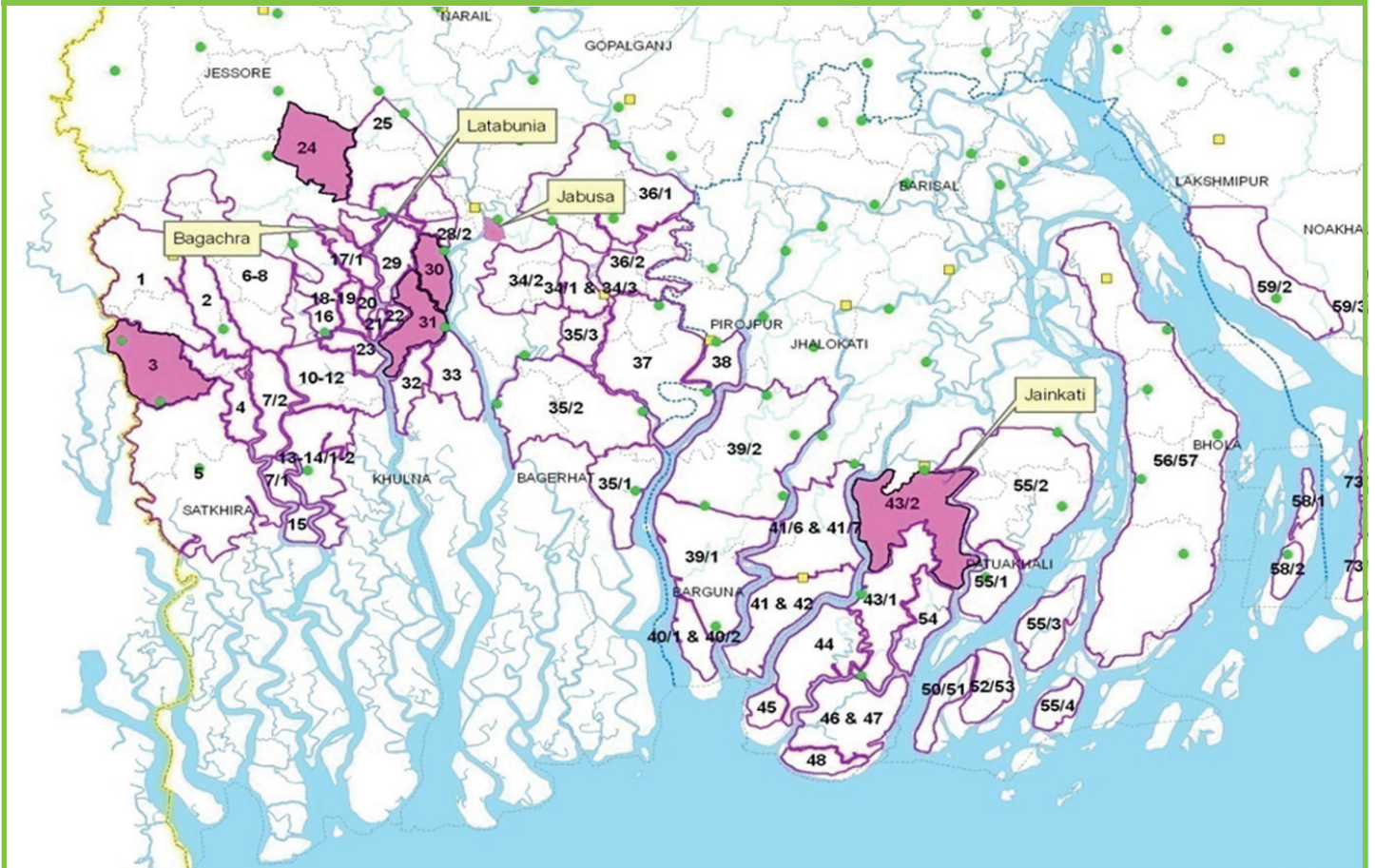
gave the project a large amount of quantitative and qualitative data to draw upon for analysis. Activities included: literature reviews; official consultations; case studies (on conflict, gender and situation analysis of coastal West Bengal regarding water management); infrastructure mapping; participatory mapping; student theses; key informant interviews; focus group discussions; household and water management organization surveys; experimental games; community consultations; and official field visits. Ultimately, this research is based on consultations with more than

3000 people who have been involved throughout the research process, from the design stage to the validation of results.

POLICY RECOMMENDATIONS

From this work, a number of policy recommendations have emerged that shed light on the challenges of governing and managing the polders and offer some potential solutions to creating a more productive and equitable future for the coastal zone.

MAP OF PROJECT RESEARCH SITES: POLDERS 3, 24G, 30, 31 AND 43/2F AND JABUSHA, LATABUNIA, BAGACHRA AND JAINKATI SUB-PROJECTS



Study Area Map of Project G3

Legend

- District Boundary
- Division Boundary
- International Bounda
- Thana Boundary
- Selected Polder for Study
- Polder Boundary
- River
- District HQ
- Thana HQ



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RECOMMENDATION 1: A three-tiered maintenance strategy can effectively prevent lack of maintenance and deterioration of water infrastructure.

Poor maintenance resulting in the deterioration of polder infrastructures such as gates and canals, and, to a lesser extent, embankments is the common feature that unites all project study sites.

The infrastructure's ability to efficiently manage water by preventing tide and salinity intrusion, and providing irrigation and drainage is limited. As a result, farmer livelihoods suffer and communities become more vulnerable to natural disasters such as cyclones.

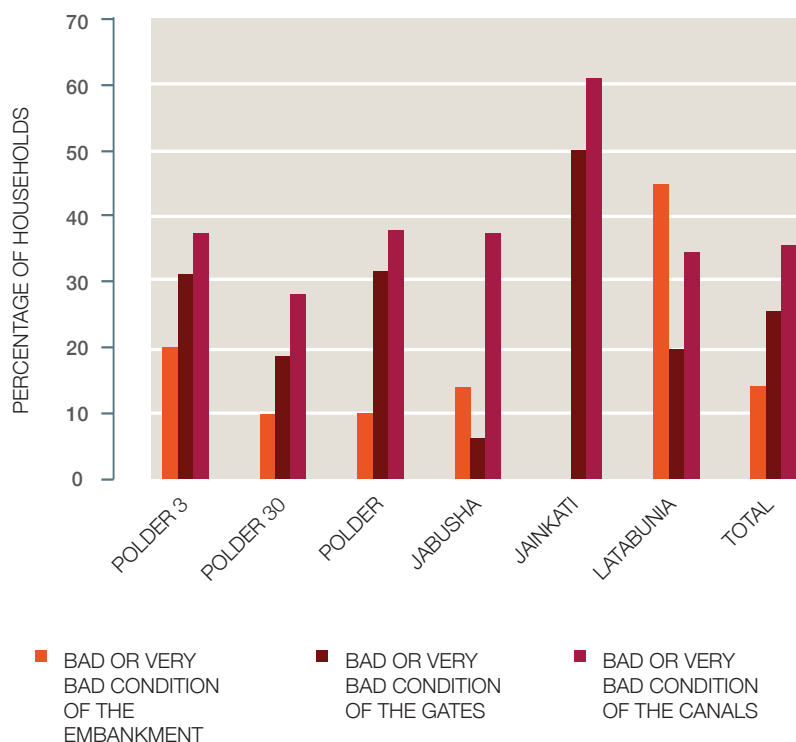
Poor maintenance is primarily a result of a lack of investment from not only community members (who often lack the capacity to make even minor repairs to the infrastructure), but also from implementing agencies, the Government of Bangladesh (GoB) and donors. The current system creates a cycle of intervention where neglect for general maintenance of infrastructure leads to significant levels of deterioration; new donor-sponsored projects are created to rebuild the infrastructure; and maintenance of the newly repaired infrastructure is once again deferred.

PROPOSED ACTION

A three-tiered strategy that recognizes maintenance as a central theme of water management can solve the problem of deferred maintenance.

- Contributions from **community members** can be increased through more effective management mechanisms and will reduce the financial burden of maintenance for the GoB, implementing agencies and donors. Community contributions can be increased by:
 - Creating **homogeneous water management groups** based on shared interests to reduce free-

CONDITION OF INFRASTRUCTURE IN SURVEYED STUDY SITES



Source: Project survey (January 2013), 1000 households

- riding behaviors and enhance responsibility.
 - Tying community member maintenance contributions to **individual benefits** (in the form of access to micro-credit, fishing rights, etc.).
- Union Parishads** can take advantage of existing social safety net schemes by applying them to infrastructure maintenance activities. Existing rehabilitation work schemes such as Kabhika and 40 Days Work can be applied to maintenance of water infrastructure and will generate employment opportunities for some of the most vulnerable members of society.
 - A long-term **Trust Fund** can be established to sustain regular maintenance of water infrastructure. The Fund would be under the responsibility of the GoB and would be funded by the GoB and donors. A percentage of all water sector funding should be kept in the Fund, with interest used for regular maintenance. Money can be allocated annually for polder or sub-project maintenance. The Climate Change Trust Fund, created in 2010 under the Ministry of Environment and Forest, can serve as a reference point.

RECOMMENDATION 2: A revised water governance framework is required to clarify the conflicting roles and counter-productive actions of actors involved in water management.

There are numerous actors involved in the management of water in Bangladesh's coastal zone. These include water management organizations (WMOs); Union Parishads; Local Government Engineering Department (LGED); Bangladesh Water Development Board (BWDB); a number of ministries; non-governmental organizations; and informal institutions such as *gher* owners. The involvement of all of these actors has resulted in a fragmented and disjointed water management system.

This research has shown that because the roles of different actors are not clearly defined, the potential for overlapping mandates is high. When conflicts over operation of polder infrastructure arise they are often resolved by deferring to traditional hierarchies and power dynamics. Inevitably, this practice leaves less influential stakeholders out of the decision-making process and is to the detriment of more vulnerable members of society. When it comes to maintenance,

overlapping mandates have the opposite effect—every actor considers maintenance to be the responsibility of someone else. The lack of accountability for polder maintenance results in the deterioration of infrastructure.

The actors involved in coastal water management each operate at a different scale; gate committees have authority over a few hectares, while Water Management Associations might control thousands of hectares. In spite of the Guidelines for Participatory Water Management (GoB, 2001), no clear framework exists for integrating different actors across these different scales. Currently, if coordination happens, it is primarily through informal mechanisms.

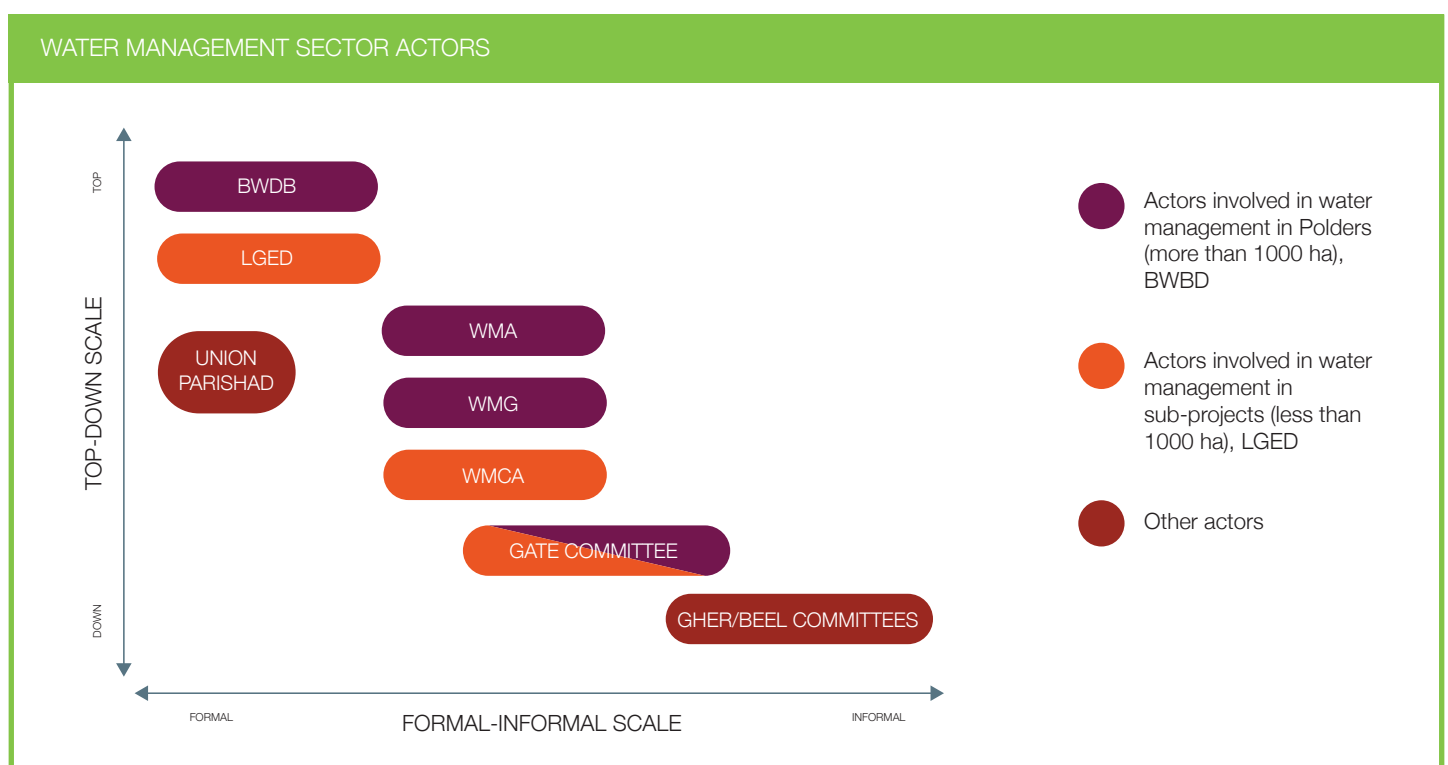
PROPOSED ACTION

1. In order to eliminate the negative consequences of this lack of clarity in Bangladesh water policy **the water governance framework of the Guidelines for Participatory Water**

Management should be revised and the roles and responsibilities for each actor should be explicitly defined.

Following the Integrated Water Resources Management approach implemented at the river basin scale, polders should be viewed as integrated units made up of several hydrological sub-units. Due attention must be given to defining the units, which should not be based solely on administrative boundaries but also take into account polder hydrology.

2. Finally, **interactions and mechanisms for coordination between different actors must be defined.** For reasons mentioned in recommendation 3, local government institutions, particularly Union Parishads, should be considered as the cornerstone of these coordination efforts. With additional support, Union Parishad Coordination Committees can take on this coordination role.



RECOMMENDATION 3: The role of Union Parishads in water management should be formally recognized.

Union Parishads (UPs) have only a limited formal role in water management. Article 47 of the Union Parishad Act (2009) states that UPs can be involved in water management. However, the broad mandate of UPs limits the extent to which water management issues can be prioritized by the institution.

Our research demonstrates that Union Parishads already take part in several water management tasks:

- UP members are de-facto involved in **operation of sluice gates**, especially in instances where Water Management Organizations are ineffective or nonexistent.
- UPs are involved in **emergency infrastructure maintenance**, such as during natural disasters.
- In the absence of any other reliable and neutral organization, UPs are involved in polder water management **conflict resolution**.
- Community members trust UPs and their elected members, and request the institution's involvement in water governance.

PROPOSED ACTION

1. The role of Union Parishads in water governance must be **clarified and formally recognized**. As elected bodies, UPs are well-placed to **coordinate the roles and responsibilities of the different actors** (WMOs, projects, BWDB, LGED, Irrigation Department, etc.) involved in polder water management.

UPs are ideal coordinators of water management in the polders because they are established government institutions and, unlike WMOs, are not dependent on project funding. UPs are long-term, embedded institutions with the ability to draw on acquired knowledge and capacity. If given



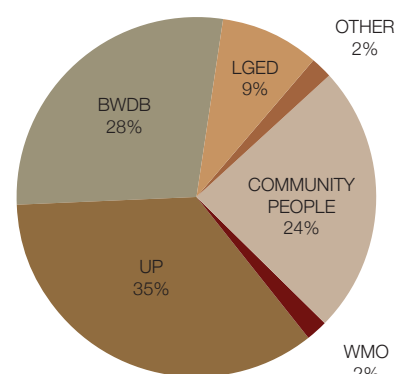
UNION PARISHADS ALREADY PLAY AN ACTIVE ROLL.

a water management coordination mandate, these capacities will only increase. Discussions over the involvement of UPs in the water sector often involve concerns of politicization, corruption and elite capture. However, UPs are elected bodies and are consequently held accountable for their actions by voters.

2. Revisions to the coordination and decision-making roles of UPs should be made in conjunction with an increased role for UPs in the **financing of infrastructure maintenance** through social safety nets.
3. Some UPs have already begun to take on a coordination role through their **Union Parishad Coordination Committees** (Article 93), which

bring together Union development stakeholders. These committees should be scaled-up and water management should be integrated into their agendas.

HOUSEHOLD PERCEPTION OF WHO SHOULD SOLVE WATER-RELATED PROBLEMS



Source: Project survey (January 2013), 1000 households

RECOMMENDATION 4: Creating sub-hydrological units within the polders can minimize conflicts arising from differences in land elevation.

Our research indicates that disagreement over the opening and closing of sluice gates is the primary source of water management conflicts in the polders. Differing drainage and water supply needs amongst farmers are explained by variable land elevation within the polder system. Conflicts arise because cropping practices (type and number of crops grown in a year, agriculture and/or aquaculture) vary among farmers. Varying land elevations create situations in which some farmland may remain dry or submerged for longer than optimal periods of time in order to accommodate the needs of other farmers whose land is at higher or lower elevations.

PROPOSED ACTION

1. **Conflicts can be reduced through the creation of sub-hydrological units (SHUs), or mini-watersheds, within the polders.** SHUs should

be delineated based on common water and land characteristics and the shared farming interests of those living within them. Common interests within SHUs allow farmers to agree upon and implement water management practices that are consistent with their improved productivity objectives.

This recommendation is based on the experiences of LGED sub-projects, which demonstrated that size matters when it comes to water management in the polders. They found that smaller and more coherent areas experienced fewer conflicts and improved coordination amongst farmers.

The process of creating these SHUs need not be technically

difficult or costly. Existing rural infrastructure including roads, embankments and culverts provides an easy starting point from which to separate hydrological units. In some areas additional separate drainage channels and small dykes may be required. Ultimately, each SHU should have the capacity to control the times and rates at which water flows in and out of its boundaries.

2. Implementation of this recommendation will again underline **the need for an integrated approach and enhanced coordination** between different organizations especially between LGED, which is responsible for rural roads, and BWDB, which is responsible for embankments.



DYKES CAN BE USED TO CREATE SUB-HYDROLOGICAL UNITS

RECOMMENDATION 5: Community-based management should shift from an inclusive approach to a targeted group approach.



IN SPITE OF AN INCLUSIVE APPROACH, WOMEN ARE CURRENTLY EXCLUDED FROM WATER MANAGEMENT

Research conducted under the project indicates that the current community-led water management framework is not achieving its stated goals of efficiency, equity and sustainability.

Efficiency: Decision-making power over physical infrastructure remains largely in the hands of implementing agencies that may question the value of the participatory process. Additionally, most WMOs become dysfunctional after project support is withdrawn.

Equity: Issues of elite capture and the exclusion or self-exclusion of large segments of water users (e.g., women, the landless and fishermen) are pervasive.

Sustainability: The poor state of most water infrastructure, even just a few years after rehabilitation, calls into question the ability of WMOs to ensure the sustainability of the polders. This is further exacerbated by the absence of financial support from communities and implementing agencies.

Current policy (Guidelines for Participatory Water Management, GoB 2011) promotes inclusive WMOs where all sub-groups of a community and all types of water users should be represented. But when applied within the context of the diverse interests and polarized societies of coastal Bangladesh, this **inclusive approach actually results in exclusion.**

PROPOSED ACTION

These facts do not negate the need for community involvement in water management. Indeed, the stated goals of efficiency, equity and sustainability of community-led organizations can be

achieved through a change in policy that promotes separate but interconnected WMOs.

A targeted group approach would involve creating water management groups based on shared interests and roles within the community. For instance, one group might be made up of fishermen, while another is made up of women homestead farmers. Implementation of such an approach may be more resource-intensive than the current model but provided coordination between the different sub-groups occurs, the long-term goals of efficiency, equity and sustainability of WMOs are more likely to be achieved.





RESEARCH PROGRAM ON
Water, Land and
Ecosystems



ABOUT THE PROJECT

‘Water governance and community-based management’ was one of five projects that made up the CGIAR Challenge Program on Water and Food’s Ganges Basin Development Challenge (2011-2014). The International Water Management Institute led the project in partnership with Bangladesh Water Development Board; Institute of Water Modelling; Local Government Engineering Department; Bangladesh Agricultural University; and Shushilan. The project was a part of the CGIAR Research Program on Water, Land and Ecosystems.



To view project publications and materials visit <http://goo.gl/Dc2qGE>
For more information on this project visit waterandfood.org

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ABOUT THE BRIEFING SERIES

The WLE Briefing series presents WLE research outputs in an accessible format to different users (policy makers, developers practitioners, investors or regional managers). The focus is repackaging research down to its essential points and appeals to the needs and interests of specific groups of decision-makers. Each brief offers evidence and gives the minimum required background. They briefs also provide concrete recommendations as to what can be done and is actionable.

ABOUT WLE

The CGIAR Research Program on Water, Land and Ecosystems (WLE) combines the resources of 11 CGIAR centers, the Food and Agriculture Organization of the United Nations (FAO) and numerous national, regional and international partners to provide an integrated approach to natural resource management research. WLE promotes a new approach to sustainable intensification in which a healthy functioning ecosystem is seen as a prerequisite to agricultural development, resilience of food systems and human well-being. This program is led by the International Water Management Institute (IWM), a member of the CGIAR Consortium and is supported by CGIAR, a global research partnership for a food secure future.

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