

PERFORMANCE EVALUATION OF SMALL AND MEDIUM SCALE WATER DEVELOPMENT SCHEMES

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In Bangladesh, water development schemes are jointly managed by beneficiaries and the governmental agencies. Initially, the water development schemes mainly, Flood Control, Drainage and/or Irrigation (FCDI) systems (small-scale scheme ≤ 1000 ha, medium scale scheme: 1000-5000 ha, and large-scale scheme >5000 ha) were developed and managed by the Bangladesh Water Development Board (BWDB). In 1998, power has been given to the Local Government Engineering Department (LGED) to plan, design and implement the small scale water resources schemes (Datta et al., 1999). The performance of such FCDI schemes is below expectations because of inadequate planning and lack of proper operation and maintenance (BUET, 1992; BUET, 2003; BWDB, 1998; Faruque and Choudhry, 1996; Molden et al., 1998). In past, performance indicators are usually selected from the literatures rather than the actual situation of the fields. In the current research, performances of four small scale schemes of LGED and one medium scale scheme of BWDB were evaluated using technical, agricultural, socio-economical, institutional and environmental aspects. The most important indicators covering all of these aspects were derived through the qualitative analyses namely (i) Multi Actor Analysis (ii) Causal Relation Analysis and (iii) Multi Criteria Analysis (Anwar et al., 2003). The qualitative analysis was performed integrating all the actors involved in the development and management of a water scheme and thus it provided the actual situation in the fields.

Data were collected from both the primary and secondary sources. Primary data (such as, agro-socio-economical and institutional data) were collected interviewing different stakeholders (sample size for each area is 25) in the study area using structured questionnaire and the secondary data (such as, technical and environmental data) were collected from different governmental agencies.

Multi-actor analysis, Causal relation analysis and Multi criteria analysis provided the basis for choosing seven important performance indicators in the order of priority: (i) impact of flooding, (ii) living standards, (iii) crop production, (iv) income, (v) participation, (vi) cultivable land and (vii) problem of drainage and water logging.

Each of the seven indicators was quantified and following results were obtained:

Impact of flooding has been reduced significantly

Living standards have been increased moderately

Crop production is below the target

Income has been increased moderately

Beneficiary participation is inadequate

Cultivable land has been increased significantly because of multiple crops

Water development scheme has significant adverse impact on environment such as drainage and water logging problem.

Results of these indicators showed that the overall performance of the FCDI system is not satisfactory due to improper maintenance and the lack of beneficiary participation in the scheme management. However, the performance of existing FCDI schemes can be significantly improved by ensuring stakeholders participation in the system management

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