

Farmer-Managed Irrigation Systems in Bhutan

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THE IMPORTANCE OF FARMER-MANAGED IRRIGATION SYSTEMS IN BHUTAN

SMALL-SCALE IRRIGATION HAS been practiced in Bhutan for many hundreds of years. Until about two decades ago all schemes evolved without any outside assistance and were managed by the beneficiary communities. Since then the Royal Government of Bhutan has increasingly promoted irrigation development. Primarily, this comprised of assistance for the expansion and improvement of main-canal physical infrastructure of small-scale schemes. In very few instances is there any ongoing management input by an outside agency. Therefore, the vast majority of the irrigation schemes in Bhutan can be classified as farmer-managed irrigation systems.

Even though only an estimated 3 percent of the total area of Bhutan is used for agriculture it employs 90 percent of the population, gives rise to roughly half of the gross domestic product, and accounts for more than a quarter of export earnings. Of the approximately 140,000 hectares of agricultural land, only about 10 percent is considered to be actively irrigated, and of this, 80 percent might be considered farmer-managed. Irrigation is believed to have great potential for contributing to meeting overall national goals and achieving specific objectives such as self-sufficiency in certain cereals and other foods.

The important areas for irrigation in Bhutan are the southern belt bordering India and the valley bottoms of the mid-hill region. There is little scope for irrigation in the high Himalayas to the north and east, and irrigated agriculture is less important in eastern districts.

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AGENCIES INVOLVED IN ASSISTING FARMER-MANAGED IRRIGATION SYSTEMS

The main agency involved in supporting irrigation is the Department of Agriculture. It provides human and technical resources through its Irrigation and Land Use Division (ILUD) to assist district authorities to draw up and implement annual irrigation-development programs. Through the Department's Policy and Planning Division periodic evaluations are carried out.

The Department of Agriculture provides assistance to two nongovernmental agencies, the Asian Development Bank and the International Fund for Agricultural Development that are involved in area-development projects covering specific areas and that are multi-sectorial in nature. Both agencies have given emphasis to working closely with beneficiary-groups in improving and renovating mostly very small existing canals. Much attention is also being given to the development and improvement of beneficiary operation and management of structures.

PROCESS FOR CONSTRUCTING OR ASSISTING FARMER-MANAGED SYSTEMS

Schemes implemented through district authorities are almost without exception initiated by the concerned communities. Submissions for assistance are made by beneficiaries through local representatives. All requests are then considered at quarterly meetings held at the district centers at which all the parties involved are represented. Schemes are rejected or placed on development-plan priority lists depending on local information and the limits set by National Directives. The Irrigation and Land Use Division has staff placed at all district centers where irrigation is of importance. Owing to a lack of sufficient staff the head office of the Department of Agriculture provides section officers to assist district authorities with the tasks of carrying out feasibility surveys and drawing up designs and estimates. District proposals are later considered by the central government. Once plans are finalized, funds are dispersed to the district authorities. Detailed investigations often still remain to be carried out and final designs and estimates drawn up. Construction of infrastructural works is carried out in all cases under the direct supervision of section officers.

At the various stages of screening projects no fixed set of selection criteria have as yet been employed. This has tended to be a subjective process based on general considerations of irrigable area, number of beneficiaries, length of canal, difficulty of conditions, and remoteness.

For those projects undertaken by the nongovernmental agencies project teams have actively searched for development sites. Project managers have day-to-day responsibility for running the projects and have immediate financial control. Accounts are submitted to the Department of Agriculture.

BENEFICIARY INVOLVEMENT

Beneficiaries are required to provide all labor for renovation works without remuneration. For new construction, beneficiaries provide unskilled labor for which they are paid a daily wage. Apart from the labor contribution provided by the beneficiaries no real consideration has been given to formalizing their involvement in the implementation of schemes. Appropriate involvement of beneficiary groups in the ongoing development process is currently the major issue being addressed by the Irrigation and Land Use Division.

Because of the small-scale nature of irrigation in Bhutan the Royal Government has, over the past four years, realized the need for an approach of full participation of beneficiaries in irrigation development. Two years ago the Department of Agriculture began to draft a proposal for irrigation policies with a view to obtaining satisfactory routine operations and maintenance of government-assisted schemes by the beneficiaries themselves. The policies aim at nurturing self-reliance by beneficiaries and encouraging a sense of community ownership. Regulations regarding the formation of water user associations and how they are to be involved in the development process are outlined in the policies.

To field-test the policies the Department has set up a project which will gradually establish a model scheme in each of the 17 districts. A research project has also been started which is studying three typical farmer-managed irrigation schemes for a complete year cycle. Information from these two projects will be analyzed with a view to finalizing the draft irrigation policies. The Irrigation and Land Use Division has set up an Irrigation Supports Unit that will be expected to provide the necessary support to beneficiary communities as the projects evolve.

CONCLUSION

National development in Bhutan began just under 30 years ago, and about eight years later an irrigation division was formed within the Department of Agriculture. Added to this very short irrigation-development history are the extremely difficult conditions in which such development has to take place in almost completely mountainous terrain with extremely high-intensity rainfall. Well-established selection and design criteria and a design process have not been realized as yet. Nevertheless, the Royal Government of Bhutan has recognized the importance of supporting farmer-managed irrigation systems, and policies and projects are being formulated to guide this development process.