audited and tracked.

e-Project Using

WEBGIS

Government of West Bengal has launched a World Bank supported project called West Bengal Accelerated Development of Minor Irrigation Project (WBADMIP) to enhance the livelihood of small and marginal farmers by creating minor and micro irrigation structures and extending agricultural support services in rain fed areas of the state. It is a big and challenging project in terms of geographical diversity associated with different agro-climatic zones of the state, reaching socially backward people and construction of numerous irrigation the project in the remotest areas. To overcome these challenges project has introduced a robust IT system supported with WEBGIS technology.

WBADMIP is a World bank Assisted project whose project development objective is to enhance agricultural production of small and marginal farmers in the project area. This will be achieved through mainly accelerated development

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Currently the revised project cost is Rs. 1,380 crores and the target is to develop around 2,800 schemes to irrigate 75,000 Ha and 100,000 farmers that will be operated and maintained by 2,300 WUAs

of minor irrigation services to small and marginal farmers, strengthening community-based irrigation management, operation and maintenance, and support to agricultural development, including provision of agricultural services for encouraging crop diversification, use of improved technologies as well as creating income-generating opportunities. Originally, the project target was to provide 4,660 schemes to provide irrigation to 139,000 Ha and benefit 166,000 farmers. Currently the revised project cost is Rs. 1,380 crores and the target is to develop around 2,800 schemes to irrigate 75,000 Ha and 100,000 farmers that will be operated and maintained by 2,300 WUAs. The duration of West Bengal Accelerated Development of Minor Irrigation project is from 2012 to 2017.

A total of 804 completed schemes have been handed over to WUAs. These schemes are expected to serve 23736.61 Ha with gross command area of 44761.427 Ha and benefit more than 66057 users.

A total of 851 registered WUAs representing more than 73,927 beneficiaries have been formed that are participating in planning, supervision & management, operation and maintenance of schemes. The members in almost all the schemes have contributed member fees indicating their interest to operate and maintain the schemes. With improved access to water, not only the monsoon crops have been saved from failure, the farmers are now growing 2-3 crops in a year. As a result, the cropping intensity has increased from 78% to 148% and while production has increased by more than 50% for Paddy. The project has supported 9,664 agriculture demonstrations covering 3678.09 Ha, 8,728 horticulture demonstrations covering 1191.9 Ha and 323 fisheries demonstrations. Fish production based demonstrations have also shown the potential to increase the gross income by five times.

Features of eProject Management

- Real time update of information/decision
- Redefining the project priority areas/districts
- Re-allocation of the human resources and support organizations accordingly
- Shifted focus on selection/inclusion of more appropriate solutions e.g. small ponds/Hapa (5% model)
- Modernization of schemes (improved design and specifications)
- Developing and promoting use of GIS system in planning, implementation, monitoring and impact assessment with team members and communities
- Capacity building of the project team members and community based institutions based on their performance
- Introduction of alternate options e.g. solar based MI schemes, diversification and market linkage based approach for agriculture, horticulture and fishery activities
- Convergence with other programs/projects made easy
- Cost of the schemes are revised and location specific design

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specifications resulting in reduction in average cost of surface MI schemes. This has created scope for construction of more MI schemes in the available budget

- Success rate increased improved confidence of all the stakeholders including beneficiaries

- The entire web GIS System is developed on ArcGIS Javascript platform. The new updates are available in every three months so the updating the services and applications are taken place within in every four months
- Training has been provided with new technique updation and tutorials are prepared accordingly and circulated among the various districts

- Total 20 including 18 district project management units, one state project management unit and one state water investigation directorate. Evolving system developed by the project wherein tools are developed, pilot tested and put in practice after necessary modifications based on the feedback received
- Service delivery channels are web, mobile, e-mail, sms etc.
- Online form submission and download system is functional and we are in the process for offline data submission

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Government of West Bengal has launched a World Bank supported project called WBADMIP to enhance the livelihood of small and marginal farmers by creating minor and micro irrigation structures and extending agricultural support services in rain fed areas of the state. It is a big and challenging project in terms of geographical diversity associated with different agro-climatic zones of the state, reaching socially backward people and construction of numerous irrigation the project in the remotest areas. To overcome these challenges project has introduced a robust IT system supported with WEBGIS technology. Most of the tools are developed, pilot tested and in practiced. Now the need is to fine tune the project and scale it up.

The earlier system was totally physical verification based having very limited accuracy and quality of information were inaccurate. The capacity of ground trothing and validation of information are also not practically possible. The process was complicated, time consuming, and resource intensive. Everything is organized and facilitated the evolution process.

The GIS based IT system has helped a lot in preparing a database for suitable locations of check dams and other structures for taking up in Jalatirtha as well as ADMI project. A total of 583 check dams (almost 432 in Jaltirtha and remaining in WBADMIP) have been taken up and almost 471 have been completed under various fund and most of these check dams had been identified initially through IT enabled GIS system. These schemes were executed successfully by mainly by WRIDD (264) and a good fraction by other departments like, I&W, PWD, PUA, and Forest Dept (all combine 319). For most of the design of those projects designer took help of online GIS based information system for collecting vital hydro morphological data for safe and economic design which led to a great success of the project.

One of the successes of this Project is to implement series Check Dams in a particular Stream. Success of such series Check Dams has been established. After installation of such series Check Dams in one of the arid District Birbhum, area of Rabi cultivation and cultivation of Pre-Kharif is increasing every year prominently in the command areas of those series Check Dams in Birbhum. There is no doubt regarding potential of such series Check Dams in suitable streams and this can be replicated in other monocrop, rain-fed areas also.

The GIS based calculation of the catchment area gives design discharge for each check dam to the highest precision resulting in accurate design of the structures and no structural failure of the check dams have been reported so far

Another success of this Project is the ability of the structure of Check Dams to