



An assessment of Walawe irrigation rehabilitation

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THE WALAWE IRRIGATION and settlement scheme was started in 1959 with the objective of developing 12,000 ha in Right Bank and 20,000 ha in Left Bank. The Uda-Walawe dam was constructed across Walawe River which has an estimated perennial flow of 1,100 mcm. The total basin catchment is 1,152 Sq. km.

Due to various reasons, only 8,000 ha in the Right Bank and 3,000 ha in the Left Bank could be developed. Project performance was very poor because of operational and structural deficiencies. Farmers grew paddy in both cultivation seasons (Maha and Yala) irrespective of soil types. Only the head-end farmers of the project both right and left bank were enjoying with the excessive water consumption while the tail enders were suffering from severe water scarcity.

The rehabilitation of Walawe Irrigation System, and its infrastructure has been necessitated mainly due to the following reasons.

- Poor condition of the irrigation canals and structures.
- Inefficient water use.
- Inequitable water distribution.
- Additional lands brought under irrigation.
- Drainage problems which were not foreseen in original plans.

The present Walawe Irrigation Rehabilitation Project funded by Asian Development Bank is being implemented with the objective of improving the physical infrastructure by rehabilitation and rationalisation of the irrigation system and strengthening the water management on Right Bank to enable irrigation supplies to be provided more efficiently. This should both increase agricultural production on Right Bank and allow further development of irrigated agriculture on Left Bank.

Many experts have shown that the total extent of the Right Bank area can be irrigated using the affordable water supply (i.e. 22.6 cumec) with proper management. Therefore the rehabilitation project mainly based on rotational supply which was never practised earlier in the project. Main features of the project are rotation, rainfall adjustments, discharge measurements and control, drainage reuse, crop diversification, uniformity in providing farm outlets etc.

The Rehabilitation Project Design is based on few assumptions.

- Farmers will be united under farmer organizations.
- Farmers will accept the new design and structures and will maintain them in future.

- Farmers will shift from continues irrigation to rotation.
- Other field crops will become popular among farmers.

Irrigation rehabilitation projects are aimed at arresting or reversing the deterioration taken place over time (J.D. Brewer et. al. 1992). For better results, these projects should be implemented as a socio-technical process for various reasons.

- The existing physical system is closely interrelated with farmers who are living in the system for many years and any changes made in the physical system may seriously affect them.
- The knowledge of the farmers on the physical system can be utilised by the design engineers.
- Getting the involvement of farmers is cost effective and efficient.
- Cost can be reduced with the beneficiary participation.
- Farmer participation helps to maintain better quality of construction.
- Farmer Cooperation is essential to follow the designed operation schedules for water management.
- Farmer participation in rehabilitation make the way for improving institution capacities of the farmers for the long term sustainability of the system maintenance and operation.

The consultant to the project - Central Engineering Consultancy Bureau and Sir M. McDonald and Partners Ltd. (Advisory Consultants) began work in 1986. Design Criteria was prepared and major changes were proposed on distributary and field canals. Rotational irrigation supply with accurate water measurements was introduced by the consultants.

These documents have apparently been prepared independently with very less involvement of O&M staff of managing agency (Mahaweli Economic Agency - MEA) or farmers. On the other hand, MEA also had not shown interest for participation in planning and designing of rehabilitation project.

After publishing the O&M manual, staff of MEA questioned the practicability of management system proposed by the manual. It was clear that O&M staff were unhappy for not having been consulted before preparing the manual.

As the time given to complete the design was limited and MEA also had no plan to get farmers and its field level

officers involved in the rehabilitation process, consultants had to concentrate on designs according to the guidelines prepared by advisory consultants. Because of this, the opportunity to avoid more problems that arose in the latter stage was lost.

Two large scale contracts were awarded for first block in late 1988 and five more contracts were awarded in 1989. Contractors started to do the construction works strictly according to the design under the supervision of local consultant. At this stage, farmers made some complaints to MEA and CECB regarding the changes being made by the contractors to their canals. As these complaints brought no desired results, the farmers were unhappy.

The first contractor could not complete at least one distributary canal system even after one year. They had worked in various distributary canals, broken many structures for rebuilding but could not complete them for a long time. This created many operational problems and farmers strongly protested against the inconvenience.

At this time, some farmers of head-end formed an independent farmer organization. These farmers were enjoying over consumption of water. When they realised that the rehabilitation would attempt to reduce their present consumption, an organization was formed to get the canals physically improved in a way that will allow them to continue enjoying the privilege of overuse even after rehabilitation.

A pilot field canal was constructed according to new design principles to test the veracity of the design and operation rules. Both the farmers and field officers were unhappy with the new designs and hence it was not possible to implement the rotation recommended by the consultants. Farmers reverted to their previous pattern.

The first rehabilitated canal was a direct off-take from the Main Canal. Farmers were used to have simultaneous irrigation and overuse of water. The proposed rotational supply was totally different to their practice. When water issues started after the rehabilitation, the farmers did not like the reduction of water supply to them and made objections. They were able to change the farm outlets and to increase the quantity and duration of weekly water supplies. Later they even broke the measuring weir as they thought that it was built to reduce their water supplies.

As the socio-technical approach was not followed, the rehabilitation process was not used as a mechanism for building commitments of the farmers and improving institutional capacities for the long term sustainability of the system. With the experience in this project, the as-

sumptions made as mentioned earlier were proved to be false without implementing the project under socio-technical terms.

In 1990, major changes were made in rehabilitation project to get involvement of farmers and give more responsibility to officers of managing agency. Local consultant was also changed to Mahaweli Engineering and Construction Agency who had irrigation construction experience for 20 years.

Farmer organizations were formed under the newly formed Institution Development Unit of MEA. Unit and Block coordinating committees comprising farmer leaders and relevant officers were formed to discuss the problems and to take decisions. A project level committee headed by the Project Manager was also formed. A programme for strengthening farmer organizations was launched. As a result, today there is a significant change in attitude and behaviour of farmers as well as officers.

After identifying the weaknesses, it was made clear that participation of beneficiaries-farmers is very essential for irrigation rehabilitation and sustainability of projects as they are one component of the system. For this purpose, formation of strong and effective farmer organizations is a prerequisite to have the active participation of successful implementation and long term sustainability of the projects. It should be mentioned that officers too should have an understanding that getting the farmer participation in all stages of the project should be necessary for more effective project implementation, maintenance of the canal system, and efficient water management which is the ultimate target of the project.

References

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- ² Design Criteria for Walawe Irrigation Improvement Project (Sir M. McDonald and Partners Ltd., 1987)
- ³ Draft Final Report on the Technical Assistant Study Irrigation Management and Crop Diversification - Vol iii-Walawe Project (International Irrigation Management Institute - 1990)
- ⁴ Inception Report of Walawe Project (Sir M. McDonald and Partners Ltd., April 1986)
- ⁵ Water Management and Operational Manual (Sir M. McDonald and Partners Ltd., July 1986)