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Irrigation Management Transfer in the ILC Pilot Project

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INTRODUCTION

The Irrigation Line of Credit Pilot Project (ILC) was initiated in the fiscal year 1988-89 with the loan assistance from International Development Association (IDA), World Bank. The Project was launched to implement a sector program in irrigation development in the western region on pilot basis, where beneficiaries were involved in all stages of project implementation. Later, the scope of the project was extended to all three western regions of the country. The project was designed to support following types of small and medium size sub-projects:

- a) Construction of new surface schemes (NEW)
- b) Rehabilitation of existing farmer managed surface schemes (REHAB)
- c) 'Turnover' rehabilitation of selected agency managed schemes to beneficiary farmers (TO).
- d) Construction and improvement of groundwater schemes to be managed by farmer groups (GW).

Management transfer was mainly adopted in new surface schemes (NEW), 'Turn Over' schemes (TO), and groundwater Schemes (GW). Transfer of technical knowledge was also expected to be imparted during the period of sub-project implementation, as beneficiary farmers were involved in all stages of sub-project implementation.

ACCOMPLISHMENT UNDER THE ILC PROJECT

Fourteen number of new surface schemes (4,730 ha), 260 nos. of rehabilitation of farmer managed schemes (25,995 ha), 25 nos. of 'turnover' rehabilitation schemes (3,119 ha) and 219 nos. of new tube well construction (4,210 ha), covering an area of 35,054 ha. were

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completed by the end of the ILC project period (15 July 1997). An impact evaluation study of some completed sub-projects (24) carried out towards the end of the project period revealed the following achievements made by the ILC pilot project:

- Expansion of irrigated areas both in the Hills and the Terai,
- Improved water supplies in surface and groundwater sub-projects,
- Formation of legal Water Users' Associations,
- Reduction in operation and maintenance inputs in farmer managed and turnover schemes (REHAB & TO),
- Considerable increase in the yield of paddy in almost all sub-projects,
- Increase in the cropping intensity in the project area from 149 to 178 percent and gross farm production by about 47% (about Rs 32,000 per ha)

The overall impact of the ILC Pilot Project was found to be satisfactory with an overall internal rate of return evaluated to be around 17%. Except a few large new irrigation sub-projects in the Hills, all systems are operated and maintained by the beneficiary farmers themselves. Supports from the Dept. of Irrigation are still required in those larger hill surface schemes like Chapakot, Atrauliputtar, Rainastar and others, as the extents of maintenance works are beyond the capability of the beneficiary communities. Training and other supports are required to enhance the management capabilities of the WUAs of these types of systems in order to enable them to run their systems in an effective and sustainable manner.

PROCESS OF MANAGEMENT TRANSFER

The ILC Pilot Project had the following four main objectives:

- i. to launch the project based on 'program approach',
- ii. to make the program as 'demand driven',
- iii. to develop effective processes and procedures for implementation of such program in future,
- iv. to increase farmers' involvement in the implementation process, including participation in the capital cost and commitment for takeover of full O&M of the systems.

Thus, one of the major objectives of the project was to build up the beneficiaries' capability to ultimately undertake the responsibility for operation and maintenance of their system. This would gradually reduce the heavy burden of budgetary requirements for O&M of the agency managed irrigation schemes for the government.

To achieve these objectives the project had a specified set of guidelines and criteria for implementation. The steps adopted were as follows:

- Application
- Identification
- Appraisal
- Approval
- Formation of legal WUA
- Agreement on Work Breakdown
- Joint supervision of the construction works
- Commissioning after completion
- Operation and maintenance
- Agriculture support

From the very first step of 'Application', the beneficiary farmers are encouraged to form a water users' association. Traditionally, farmer managed irrigation systems (FMIS) are operated and maintained by the beneficiaries themselves through a committee or a trust or a leader farmer usually known as 'Mukhiya'. The interventions of the ILC program in these cases formalize the water users' groups that already have most representatives from their old groups. In a few cases, it has also been observed that a separate WUA is registered and legalized for carrying out the rehabilitation works, but after completion of the works they become non-functional. Instead, the operation and maintenance works are executed through their well-established traditional system. The reason might be that as the farmers are more conscious towards the water right and distribution, they try to adhere to their traditional system. Hence, management transfer in the case of rehabilitation schemes of FMIS is not quite relevant. Accordingly the main concern of the Dept. of Irrigation on management transfer is focused towards:

- i. new construction schemes,
- ii. turnover of agency managed schemes, and
- iii. new groundwater schemes.

In order to be acquainted with the findings of the management transfer in ILC schemes, it would be appropriate to understand in brief the activities in the implementation steps, which are as follows:

- **Application:** The farmers or their group with a list of signatories of at least 67% of all beneficiaries apply for assistance to District Irrigation Office through a prescribed 'Request Form'.
- **Identification:** The District Irrigation Office (DIO) in consultation with the District Agriculture Development Office scrutinizes the applications and list of schemes to

be included under identification survey is prepared. Identification surveys are carried out to select schemes for further studies (feasibility study, detailed survey). Approved program budget by the National Planning Commission also contains the list of systems to be included for feasibility study or detail survey.

- **Appraisal:** Feasibility study is carried out in these systems to prepare an appraisal report for approval under ILC Program. District Irrigation Offices submit these Appraisal reports to Mobile Irrigation Team (MIT) of Regional Irrigation Directorates. After scrutiny by MIT, it is submitted to Regional Appraisal Committee (RAC) for recommendation.
- **Approval:** With due recommendation from RAC the sub-project is approved for implementation by the Approval Coordination Committee formed under the chairmanship of the Secretary, Ministry of Water Resources. Sub-projects costing less than Rs 1.0 million are directly approved by the Director General, DOI on recommendations of MIT and the Regional Director.
- **Formation of legal WUA:** The farmers are required to form a Water Users' Association and its members are elected or nominated by consensus through the mass meeting of beneficiaries. The WUA is registered in the District Water Resources Committee to make it a legal body. District Irrigation Office (DIO) plays the role of facilitator to form the association from among the beneficiaries.
- **Agreement on Work Breakdown:** After WUA becoming a legal entity, a work breakdown agreement is made between DIO and WUA to carry out the rehabilitation works. Dialogues are carried out between WUA and DIO to execute the works smoothly and also to assure quality product.
- **Joint Supervision of the Construction Works:** A supervision committee is formed from WUA members, beneficiaries and overseers of District Irrigation Office. They jointly supervise the construction works carried out by the WUAs as well as the contractors.
- **Commissioning after completion:** After completion of rehabilitation or construction works, the system is tested with water delivery to examine the reliability of the works. WUA and DIO members jointly inspect the completed works. A certificate of completion is enclosed to testify that works are completed satisfactorily as the specifications. Remarks are made in case of defective works and these are rectified accordingly.
- **Operation and maintenance:** After the completion of the works, it is the responsibility of the WUAs and beneficiaries to operate and maintain their systems. DIOs will be responsible for providing training to the WUA members to enhance their capabilities for smooth operation and maintenance of their systems.
- **Agriculture Support:** Agriculture extension supports are envisaged to be introduced in the completed ILC sub-projects. This is done by requesting District Agriculture development Office. Separate budget provisions are made to conduct these

activities. ILC program budgetary provision was made at DIO and it was executed by DADO through their field level offices.

The implementation of the ILC Pilot Project was generally carried out by following the above procedures.

MANAGEMENT TRANSFER IN NEWLY CONSTRUCTED SCHEMES

Conversion of the rain-fed lands into irrigated lands was the main objective for the construction of new schemes. There is a dramatic increase in the production levels of such lands after bringing them under irrigation facility. Hence, farmers are very keen on these types of irrigation development and are extremely cooperative in the implementation activities. However, some of the large hill schemes were not found to be economically viable, due primarily, to high cost as well as long period of construction. In general, the experiences from the ILC Pilot Project reveal that farmers take active part in the implementation of their sub-projects, with due share of their contribution. However, in larger schemes like Chapakot, Atrauliputtar, Rainastar, beneficiary farmers seem to find difficulties in meeting their contribution, as their shares of contributions are also relatively high.

In comparison to larger schemes, it has been observed that small and medium size schemes are easy to operate and maintain and mobilizations of resources are also easier for such schemes. The new small and medium schemes constructed under the ILC program particularly in the hills are satisfactorily operated and maintained by the farmers. On the other hand, larger schemes like Chapakot, Atrauli and Rainastar are expensive and difficult to maintain because they usually have long canal lengths (idle lengths) which have to traverse through unstable slide zones. Out of 14 sub-projects undertaken under the ILC program, 6 were completed by the end of project period (15 July 1997). Medium or small size schemes like Luang Ghalel, Lupe, and Bhakunde in Kaski and Lamjung districts are well managed by the farmers. On the other hand, the larger systems are faced with various problems.

Management Transfer or Walk Over

Newly constructed surface irrigation schemes in the Hills require special maintenance for at least two to three years, primarily due to high probability of slide in unstable zones along the canal alignment. This period is specified as "the commissioning period" in the appraisal document and it is usually three years after construction. It is the responsibility of DIO engineers and overseers to monitor the functionality of the system during this period and do the needful.

In addition, the WUAs and beneficiaries in such new schemes should be trained and oriented to tackle the maintenance works and in adopting the operational methodology as designed. However, it has been observed that, in practice no such activities are undertaken after the completion of construction works. The beneficiaries and WUAs takeover the operation and maintenance of the system by their own efforts and capabilities. Only in those cases where they are totally incapable to maintain their systems, they approach the District Irrigation Offices. Usually after construction, the support from the DIOs almost stops. Thus, instead of gradual transfer of management to the WUAs by imparting them with necessary training on operation and maintenance of the completed schemes, the DIOs have a tendency to suddenly pull out their supports.

Distribution Structures Should Reflect the Operation

The designer of the irrigation structure should keep in mind that these systems are to be operated and maintained by the farmers. The mode of operation and distribution methodology should be easily understandable and usable by the farmers. It has been found that the most common method of water distribution in the FMIS in the Hills, is the method of proportional distribution. It is however found that the structure designed to distribute the canal water does not take into account such considerations. In such cases, the farmers cannot quantify the flow and cannot distribute evenly and equitably in their command areas. This results in manipulations in water sharing practices. Considerations for the future mode of operation of the system based on the capability and experiences of the beneficiary communities should be given due priority at the design phase itself.

MANAGEMENT TRANSFER IN 'TURN OVER' SCHEMES

Prior to the intervention of the ILC program, the agency-managed systems were supported by HMG/N's direct budget for its maintenance that was generally inadequate. It would be appropriate to state here that such systems are generally in poor conditions and function inefficiently due to lack of proper operation and maintenance. As one of the components of the ILC Program, such systems are rehabilitated and completely handed over to the beneficiary communities (WUAs) after rehabilitation. Rehabilitation works in such systems are carried out only when the WUAs of the systems agree to take over the system completely after rehabilitation. It has been generally found that farmers, at first instance, were not very responsive. Their tendency was to shy away from undertaking the entire responsibility of system operation and maintenance. On the other hand, they also understood the importance of the opportunity presented to them and came to an agreement with the DIOs for the implementation of rehabilitation programs. The main concern of the beneficiaries in the case of turnover scheme was related to needed support during catastrophe. Farmers often expressed that the financial support from HMG/N would be stopped after 'turnover' and if major catastrophe occurred damaging the system beyond

the capacity of the beneficiaries, it would be difficult for them to receive the needed support. So, the DIO staffs need to assure that the water cess collected from the users are to be used for necessary O&M of the system, and in the event of major breakdown or catastrophe by the act of God, government would support in repairing the damages. If the farmers are convinced and are ready to takeover, the rehabilitation works could be carried out.

Generally, the contract works of the DOI's part also are awarded to WUA. In such cases, savings from the contract works are kept in WUA's accounts for future O&M. Formation of Water Users' Association of the beneficiaries is the primary requirement prior to initiation of turnover. In many systems, WUA existed prior to the ILC intervention, which were active, involved in water allocation, and able to influence the agency for allocating maximum maintenance budget.

In some instances, the DIO personnel also play vital roles in handing over of the system to users. In Gorkha, DIO was successful in handing over Chhepetar, Horen Kulo and Arutar systems to the WUAs.

Turnover Attitude of WUAs and Beneficiaries after Rehabilitation Works

The work breakdown agreement made between the WUA and DIO generally specify that the system shall be considered as a 'turned over' system after completion of rehabilitation works and its commissioning. But cases have been observed where farmers are unwilling to takeover the system even after the completion of rehabilitation works. Either they would find another excuse for demanding more works or they would simply refuse to takeover. Handetar Irrigation System of Lamjung District has its long history of 'turnover' and 'takeover'. The Irrigation Management Project first started its pilot test on this scheme to make it a self-sustainable system and tried to hand over the system by forming Water Users Association. It failed to materialize the objectives. Later on, the ILC also intervened in this system. Ranghatar and Bhorletar irrigation schemes have the same history. Thus, even after the completion of rehabilitation works WUAs and farmers may not be ready to takeover the system. Irrigation Policy has clearly specified that such systems in which the WUAs and beneficiaries are unwilling to takeover the responsibility of O&M, HMG/N shall stop further support for O&M. However, in practice, this clause of Irrigation Policy has been found to be waived in cases like Handetar.

State of Systems 'Turned over' to WUA

The systems are functioning satisfactorily. Chhepetar Irrigation System of Gorkha District was one of the systems studied for its performance and impact evaluation. The findings reveal that the system is functioning satisfactorily without any serious problems. The WUA is still lagging behind in enforcing strict rules for water allocation, which could

further influence their irrigation coverage. It is noticed that training in water management and agriculture extension support to WUA could be very effective for better performance of this system.

SUMMARY AND CONCLUSIONS

- i. Activities of WUA and DIO are focused mainly on the rehabilitation or construction works only. Follow up on activities of training and capacity building of WUA members for conducting proper O&M are lagging behind.**
- ii. Larger hill schemes like Chapakot, Atrauliputtar, Rainastar and Rampurphant may be beyond the capacity of the WUAs alone for taking over the responsibility of their full operation and maintenance and may need government support for some more years.**
- iii. The system design in the new schemes should be based on the consideration of the operation mode and capability of the operators.**
- iv. Initialization and bargaining points for 'turnover' to WUA in agency managed irrigation scheme should be focused towards Water Cess Collection and awarding the contract of rehabilitation works to WUA. Adamant beneficiaries or WUA should be treated with the clause 2.2.2 (Gha) of Irrigation Policy to stop further support in O&M.**
- v. Management transfer is considered to be effective only when the WUAs are fully capable and agency could show a definite source of fund raising to maintain the system. In other words, revenue mobilization should be made clear to the beneficiaries or WUAs.**