

Institutionalizing Design Principles in the Irrigation Management Improvement Projects in Nepal

Prachanda Pradhan

Abstract.

Self-governing irrigation organizations have , more or less, imbibed the design principles. The performance of the irrigators organization with the features of the design principles is reported to be satisfactory to the clients of the irrigation systems.

Effort will be made in this presentation to examine not what has happened in the adoption of the design principles in the irrigators organization , but try to analyze how Asian Development Bank funded project on “ Community Managed Irrigated Agriculture Sector Project” (CMIASP) and World Bank funded project on Irrigation and Water Resources Management Project (IWRMP) in Irrigation Management Transfer component in Nepal introduced procedure to strengthen irrigators organization incorporating those design principles identified by Ostrom.

In some irrigators organizations, these principles exist as they evolved over period of time. The issue to examine here is how can these principles be institutionalized with the external midwifery assistance in the newly formed Water Users Associations (WUAS)? What might be complementary and contradictory phenomena when efforts are made to institutionalize those design principles in the new irrigators organization

Drawing examples from the World Bank and ADB funded projects on irrigation sector as mentioned earlier, procedures to institutionalize design principles will be analyzed and findings will be discussed.

Introduction

There is trend all over the world and in Nepal as well that the promotion of participatory irrigation management through functioning Water Users Associations of the farmers considered to be the basis for better irrigation system performance. There have been exercises by the academicians and practicers to help establish functioning and self-governing Water Users Associations (WUA). Lin Ostrom has identified eight design principles that should exist in a well functioning WUA.

In Nepal, there is tradition of farmer managed irrigation systems (FMIS) for many years. Many of them have functioning and responsive WUAs. However, there are others which need assistance by the government to strengthen its WUAs. Besides FMIS, one third of irrigation systems in Nepal is managed by the irrigation agency. In order to provide assistance to both agency managed and farmer managed systems, National Irrigation Policy and Irrigation Regulations have been promulgated by the government of Nepal. Hence, Irrigation Policy recognizes the existence of WUA in irrigation management. The Irrigation Regulation to be implemented by Department of Irrigation (DOI) made provisions for legal existence of WUA.

Before understanding the dynamics of well functioning WUA with those design principles, it is proposed to discuss the issues relating the midwifery in institutionalizing the WUA with those design principles. Is it possible? The methodology adopted and actors involved will be discussed in the process of institutionalizing those design principles in WUA. The following table indicates the design principles and the provisions of Irrigation organization for WUA in Irrigation Regulation of DOI in Nepal.

Table 1. Comparison of Design Principles and the Provisions of Irrigation Regulations, Nepal 1999

Design Principles	Irrigation Regulation, Nepal, 1999
<i>Design Principle . 1</i> Clearly defined boundary (Boundary of service area, individuals / households with right to use water)	Boundary and membership are spelled out
Design Principle.2 Proportional Equivalence between benefit and cost (Benefit derived and obligations attached to)	The provision is not clear in the regulation. The provision of fixation of water charge by the committee is provided. Committee is consisted of Irrigation Officer, District Agriculture Officer and Chairman of WUA
Design Principle.3 Collective Choice arrangement (Collective decision process to modify the rules/ settlement of the problem and compliance of rules)	Instead of attempting by the members of the WUA for collective decision to modify the rules or settlement of the problem, 2/3 members of the general assembly file petition to the Irrigation Officer. He may even dissolve the WUA if he feels that WUA acted against the regulation
Design Principle. 4 Monitoring Regular monitoring of activities affecting the performance of the system	Provision not clear

<p>Design Principle. 5 Graduated Sanction Violation of operational rules will be subject to graduated sanction (Sanctions will depend on the seriousness of the violence)</p>	<p>Provision of graduated sanction is not apparent in the regulation.</p>
<p>Design Principle.6 Conflict resolution mechanism Quick way of conflict resolution among users and between users and officials</p>	<p>The Irrigation Officer dissolves the WUA and new election for WUA committee will be held under the supervision of Irrigation Officer. This makes WUA officials accountable to the Irrigation Officer, not to the Irrigators.</p>
<p>Design Principle.7 Minimal Recognition of rights to organize (Right of users institutions are not challenged by external government authorities)</p>	<p>Registration of WUA in Irrigation Department is compulsory before getting assistance from the government. Before this provision, it is to be registered under Association Act 1979, and District Water Resources Committee under Water resources Act, 1992.</p>
<p>Design principle .8 Nested Enterprize Appropriation, provisions, monitoring, enforcement, conflict resolution, governance activities are organized in multiple layers of nested enterprises</p>	<p>Such provision is not in existence</p>

Ministry of Water Resources.1999. Irrigation Regulation of Nepal,. Kathmandu, Nepal

Elioner Ostrom, 1999. "Design Principle in Long Enduring Irrigation Institutions" in Michael D. Mc.Ginnis (ed.). Polycentric Governance and Development: Readings from the Workshop in Political Theory and Policy Analysis. Ann Arbor, The University of Michigan Press

Characteristics of Proper Functioning and Responsive WUA

Drawing cue from the design principles as proposed by Lin Ostrom, following observations of the proper functioning and responsive WUA are made;

1. Wider participation of the members of the system and equal distribution of stake among head, middle and tail end farmers make the organization strong.
2. Mutual dependence between head and tail farmers due to difficulty of water acquisition or resource mobilization make the farmers respect each other. In such system, both sections have to contribute labor/ cash for acquisition of water in the canal, so equity in water distribution and respect to tail enders by the head enders becomes important. In such system, benefit would be equally distributed. This feature makes the WUA to stay together.
3. Transparency of irrigation related activities are important. This takes place in the annual general assembly meeting of the WUA. During this time, rules and regulations and statement of income and expenditures would be discussed. The elected members of the WUA would be accountable to the general assembly. The participation in the general assembly would make the members know about the system. Under such system, water rights are made transparent.
4. Resource mobilization is one of the major activities of the WUA. Resource mobilization based on equality is important. Cash, kind or labors are to be recorded properly. It should be transparent and account is open to all members of the system for inspection.

5. Water would be considered as the community resource so the rules for all members agree water distribution. Decision for water distribution is to be made collectively and enforced by the committee. There are provisions of punishment for not complying the water distribution rules. These provisions make the WUA work and are effective.
6. Water right is usually specified and it is linked with the obligations and resource mobilization.
7. The legitimate executive committee formed on the basis of the voice of the member farmers would be effective one. It can act on behalf of the assembly of WUA. This gives room for wider representation of the farmers in the executive committee.
8. The general assembly would be effective one. It meets at least two times a year. Overall rules and regulations are to be passed by this assembly. Each year, it reviews the situation and comes out appropriate rules and regulations for the management of the irrigation system.
9. The executive committee is accountable to the general body.
10. The water supply situation should be neither too scarce nor in abundance. Both situation may discourage collective action. In the meantime, the technology

adopted in the system management should be appropriate one for WUA management in maintaining equity, reliability and transparency in the system management.

These factors also represent general features of effective WUA. Quantity of water availability, water acquisition procedure, and water right and distribution, in addition to the relationship of WUA with the government agency and other external agencies have an influence over the contributing factors for proper functioning of WUA..

Dependency Syndrome of WUA:

Pradhan and Bandaragoda 1997, quoting a regional study of such organisations in South Asia, put the problem as follows: “Water Users’ Associations have not been effective because they did not reflect the multiple needs of the farmers, rather they work as an extension of the irrigation department in many places. The Water Users’ Associations should develop a self-reliant basis for their functioning, in their areas of jurisdiction, while they pursue an interdependent relationship with the government agencies.”

This pattern of dependency on the promoting agency has been reported frequently, and from many different types of economic and political environment.

The core of this problem is that the new organisations are initially accountable to the promoting agency of government. The direction of their accountability must change, so that they become accountable to their own membership. If this does not happen, they are not likely to become sustainable as independent organisations. So, when

Pradhan and Bandaragoda say that the organisations must “develop a self-reliant basis,” we should recognise that that development of self-reliance does not depend only on actions and behaviour of the organisations and their own leaders. It will be decisively influenced by actions and behaviour of the promoting agency, and of agency officials who are in frequent contact with the water users’ or irrigators’ organisation .

Based on the design principles suggested by Professor Ostrom, efforts are made to establish WUAs incorporating those features in Community Managed Irrigated Agriculture Sector Project (CMIASP) funded by Asian Development Bank (ADB) and in component B of Irrigation and Water Resources Management Project funded by World Bank. In the following sections procedures followed to establish effective and responsive WUAs in these two projects are given.

Strengthening WUA in Community Managed Irrigated Agriculture Sector Project (CMIASP)

This project aims to enhance the productivity and sustainability of about 210 existing farmer managed irrigation systems in 35 districts of central and Eastern regions of Nepal through participatory planning, water users association strengthening, improved irrigation facility and O&M and support for agriculture and livelihood along with institution strengthening.

The objective of institution development in CMIASP is to strengthen the WUA of the farmers where the WUA members can play an active and effective role in irrigation

development from identification to post construction activities of O&M . It also takes driving seat in promoting agriculture and social development programs in the irrigation project. Who can take an important role in shaping and strengthening the WUA which will be able to shoulder all those expected multi-functions of WUA. It is envisioned that Non-governmental organization (NGO) can play crucial role in strengthening the capacity of WUA in line with the design principles.

Every existing FMIS requesting assistance customarily has / retains an institution of some kind or other. In some schemes, only a few lead farmers may be operating and maintaining the scheme while in others a complete WUA executive committee with orderly elected office bearers may be operational. So the NGO has to assess the status and strengthen WUA. Checklist to assess the status of WUA is given in Appendix 1.

The field Office of Department of Irrigation (DOI) is responsible for overall irrigation development program. However, one of the objectives of the project is to strengthen WUAs and make them capable of undertaking irrigation management responsibilities from rehabilitation of physical features to water management and agriculture development. Alternatives available to mobilize the WUAS for its capability development according to those design principles are (a) employment of NGO for this task and (b) mobilization of the Department of Irrigation staff. Staff of DOI have been there for long and there has not been effective contribution of them towards strengthening WUAs. Hence, it is proposed that NGOs with specialization in social

mobilization are to be employed for the task of strengthening of WUAS. Following guidelines are provided to NGOs.

1 - NGO Preparation and Training (before going to the field):

An orientation/training program for NGOs will be organized. Any NGO staff deployed to the field must attend the training.

Other preparatory activities include:

- Upon signing the contract with the Sub-project management unit (SMU), the SMU should provide the NGO:
 - application form of the system with the list of beneficiaries and other information (*application form filled in by the farmers*)
 - a few brochures of CMIASP (*Brochure in Nepali for distribution*)
 - scheme verification report of the system (*Report of SMU*)
 - any other relevant information about the system including checklist, guidelines and exposure to Participatory Rural Rapid Appraisal (PRRA techniques)
 - NGO field manual
- Become familiar with CMIASP and expected approach to participatory development
- Agree with SMU on the timing for field activities and date for kick-off meeting.
The kick-off meeting should be coordinated by the SMU Chief.

2 – Kick-Off Meeting in Subproject Area (1day) – Led by SMU, with WUA, NGO

The Irrigation Development Division/ Sub-division (IDD/SD)officer from SMU should take lead to organize this meeting as they are acquainted with the subproject area and its residents. At this meeting:

1. IDD/SD shall introduce the NGO to the prospective beneficiaries at the field level.
2. This meeting shall be attended by the WUA/committee members, at least those members who signed the request form and other beneficiaries around.
3. IDD/SD shall inform the status of the request form and brief the beneficiaries about the NGO's work.
4. NGO shall briefly discuss the Project and its processes focusing on the feasibility stage, and noting the requisites of the farmers:
 - a) beneficiary list with land holdings
 - b) list of social groups, landless and disadvantaged.
5. NGO shall utilize this opportunity to get acquainted with the committee and area & canal system. During the meeting NGO should probe and find out whether the WUA/Committee is representative i.e. from head, middle & tail. If not the need for this shall have to be emphasized and reorganization can be scheduled.
6. The next meeting(s) day / date shall be scheduled with farmers.

7. The NGO shall take notes and submit documentation of decisions made, with a list of members present

Outputs:

- Documented decisions made at the Kick-Off Meeting
- NGO Field Activities Plan

3 – Information Campaign in the Subproject Area

The community will need to be fully aware of the Project and their role in improving their irrigation system. Share information about CMIASP with as many farmers as possible. Explain the farmers' involvement in decision making and seek their feedback. Distribute CMIASP pamphlets. It is advisable to spend a few nights in the area before conducting information gathering to get acquainted with the people and share information.

Output: Description of information dissemination activities

4 – WUA General Meeting and Other Farmer Meetings (2-4 days)

A general WUA meeting shall be convened to confirm representation of the head/middle/tail of canal, or to form an ad hoc WUA committee representing the

head/middle/tail. Women as well as dalits and janajati must be represented on the ad hoc committee. Other meetings will be organized at SP location of head, middle, tail of the canal (2 meetings can be held in a day). Topics for discussion shall be:

- Further brief information dissemination on the project and processes
- Formation of WUA Ad hoc committee with representation from head/middle/tail or verification of existing WUA representatives from head/middle/tail
- Determine the status of WUA activities in the system
- Completion of land-beneficiary list. Arrange for the inclusion of missed out farmers in the list.

a) Land-beneficiary List

The land-beneficiary list is a simple list including land owners' name, location and land area irrigated at present, new area to be irrigated after SP and plot numbers. Land records are normally kept by the farmers and in several systems the WUA also retains such information. First, prepare the users list of the existing command area and the list of beneficiaries of the proposed command area. The list should include the size of the landholding as well and location of the farm (head, middle and tail end branches no.). Appendix –4

The NGO should start from the name list submitted on the request form since the request was expected to include at least 70% of user farmers. The NGO shall

update this list and include those existing farm households that use water but have not been included or were missed. In order to achieve this, the NGO staff may need to stay back in the community for 2-4 days.

Key farmers / WUA shall have a fair idea about the present boundary (service area) of the existing system and the NGO can get assistance from them while delineating the boundary.

5 -- Joint Walkthrough of Canal (1Day)—with SMU and WUA Ad Hoc

Committee

The NGO shall facilitate a walkthrough of the canal system from head to tail, helping farmers (especially disadvantaged and vulnerable groups) to identify problem areas. Other interested or concerned farmers can participate in the walkthrough.

The NGO's role during the walkthrough is to facilitate discussions and take note of the basic characteristics of the community, and farmers' social and agricultural problems, needs and requirements.

<p>Output: Description of basic characteristics of the community, and farmers' social and agricultural problems, needs and requirements is to be prepared.</p>

6 – Social Information Gathering

The NGO shall produce the following outputs based on the discussions during the Joint Walkthrough and other discussions with farmers and those living in the

subproject area. A Participatory Rapid Rural Appraisal may be conducted as necessary:

a) Vulnerable and Disadvantaged Groups

The NGO shall prepare a separate list of households (approximate) from social groups like Dalits, landless, marginal farmers and women headed households residing in the command area

b) Social Map of Command Area

A social map identifies the villages/communities in the command area, indicating their location (i.e. head, middle tail) in the canal system. The map is a free hand sketch/outline of present intake site, main canal and major branch canals with existing structures, if any. The map may further reflect concentration of specific ethnic social groups in particular area and other social facilities like school, health post etc in the command area. The walkthrough conducted earlier will be helpful to draw such lay out sketch. In doing so, the NGO can also draw the line diagram of the canal system.

Methods/Tools

The NGO will organize various meeting as a basic procedure. In addition, the NGO shall employ PRRA tools at the field level. Although there are several techniques of

rapid appraisal, for our purpose here following are considered adequate and hence suggested.

- Social Map: Can be drawn on ground, or paper
- Transect Walk
- Ranking
 - Well being / Wealth ranking
 - Preference ranking
- Semi structured interview
- Focus Group Discussions (FGD): For WUA assessment the NGO should use the checklist (presented in Appendix to conduct the FGD.)

Documentation of Activities

The NGO should keep a record of activities undertaken in a diary. WUA meeting minutes and the participants list need to be recorded. Other reports are to be kept properly and shared with the FS/SIP Firm as needed.

The Final Report of work completion is to be prepared and submitted to IDD/IDSD.

Outline of the Final Report:

- Participation in the Training Program (indicate who attended which programs)
- Fielding of Staff in the irrigation system (indicate who was fielded, and for what dates/duration)

- Description of information dissemination activities
- Description of participatory information collection
- Participation of other members from NGO group and activities undertaken by them
- Issues/problems encountered and steps taken to overcome them

Annexes:

- Documented decisions made at WUA meetings, with list of members present
- List of names of WUA representatives at head, middle, and tail of the canal
- List of beneficiary names with landholding size
- Completed checklist of WUA status and socio-ethnic composition of residents in subproject area
- Description of basic characteristics of the community, and farmers' social and agricultural problems, needs and requirements
- List of numbers of households with women heads, dalits, landless, and other vulnerable or disadvantaged
- Social map of command area
- Report on beneficiary views about the subproject
- List of names of potential community organizers
- Report about discussions on resettlement, with statements from affected households

After these activities of NGO, NGO takes initiative to help form WUA committee, its constitution adaptation by the general assembly, list of beneficiaries and resource mobilization basis. The WUA shall be duly registered in DOI. In the meantime, agreement between DOI and WUA will be concluded to start physical rehabilitation work. The resource mobilization by the farmers groups will be determined and WUA agrees to abide by the decision regarding resource mobilization. The WUA takes responsibility through its sub-committees to monitor the quality of construction works, undertake social and agriculture development activities and O&M responsibility. Hence, NGO shall provide assistance to WUAs between 18-24 months intermittently.

The question is : Will the employment of NGO be able to institutionalize design principles in WUA thus formed through the social mobilization of NGO?

Irrigation Management Transfer (IMT) component of Irrigation and Water Resources Management Project

The overall objective of this component is to provide improved arrangements and instruments for O&M of public irrigation schemes, completing and consolidating water management transfer to Water User Associations (WUA) in the Terai. These WUAs are under agency managed irrigation systems. This component will turnover Agency-Managed Irrigation Systems (AMIS), after essential structural improvements to WUAs.

The first specific objective of this transfer is to empower the Water User's Association to take over the governance, management and maintenance of the irrigation system. The project assistance would focus on establishing sustainable

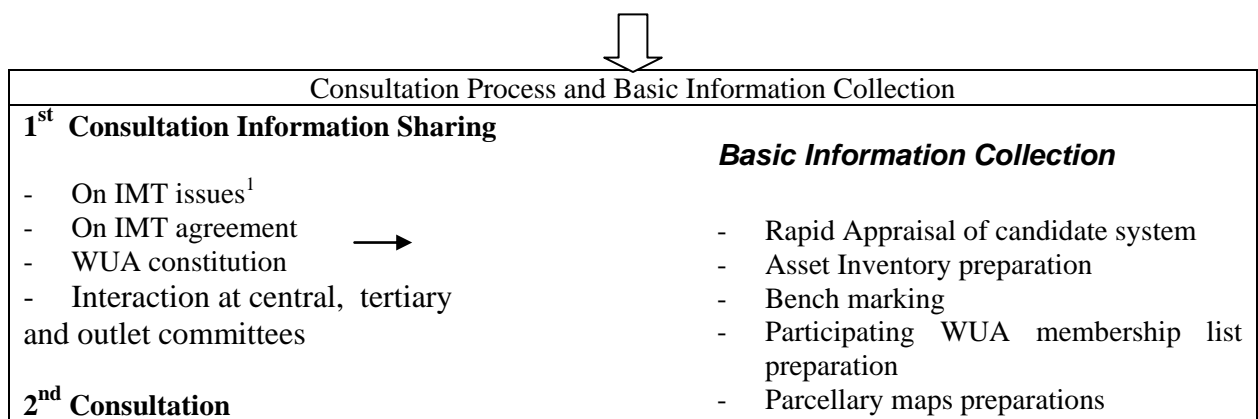
and effective WUAs in all schemes *through intensive consultation process among the farmers at all levels of the system*, by formulating asset management plans and providing support for essential *structural* improvement (ESI), which would have direct and positive impacts on irrigation performance, farm income, and rural employment. The component will provide improved arrangements and instruments for O&M, and complete and consolidate irrigation water management transfer to the WUAs. The management transfer would be considered complete with the beneficiary take-over of functions of operation and maintenance and management with the exception of a few defined activities that require higher levels of technical skill, such as the operation and maintenance of headworks and main canal systems, which will be performed by the government. It would also support (a) essential *structural* improvement of the schemes to be transferred (b) transfer management to the beneficiary WUAs partially or completely in accordance with their capacity, (c) establish sustainable and effective WUAs through training courses developed for them, (d) institutionalize the process of transferring O&M responsibility to WUAs and help prepare/implement an Asset Management Plan that sets priorities for rehabilitation and maintenance, and (e) improve capacity of DOI to facilitate transfer and develop efficient institutional arrangements for investments in rehabilitation and maintenance (e.g., contracting and outsourcing). *(f) The sharing of responsibilities between WUA and DOI will be institutionalized through an agreement between WUA and DOI.*

The second specific objective is irrigation service improvement covering all irrigation systems/schemes included in the component. The sub-components would involve

(a) strengthening of fee collection by water user groups; (b) use of contractual arrangements to clearly specify the rights and obligations of DoI as the bulk water supplier and the users; (c) use of benchmarking for all public irrigation services; and (d) installation of water measuring devices for greater transparency and accountability. To achieve this, training and capacity building of DoI field staff and members of users groups will be undertaken and the DoI will be appropriately restructured for assuming new roles after transferring irrigation services provision to WUAs.

The key inputs will be capacity building and training for beneficiary takeover and management of tertiary irrigation infrastructure. The key outputs are higher water delivery efficiency and better availability of irrigation water.

Stage 1: System Identification for IMT



¹ Role and responsibilities both of DOI and WUA to be redefined. WUA taking responsibility of O&M and resource mobilization for the management of the systems below main canal. DOI takes responsibility of headwork and main canal. Terms and conditions of agreement and draft constitution to be discussed. Based on 1st and 2nd consultation, common understanding will reach in the 3rd consultation on agreement, WUA constitution, cost sharing, working procedure of IMT

- Comments on IMT issues
- Suggestions on IMT
- Suggesting on WUA Constitution
- Incorporation of comments and suggestions

Assisted by NGO/AO/CO

Assisted by private firm



Stage 2: Preparation for IMT Implementation

Interaction between WUA and DOI	
<p>3rd consultation</p> <ul style="list-style-type: none"> - Agreement on IMT issues - Acceptance to take responsibly of O&M below main canal - Acceptance to collect ISF collection required for O&M below main canal - Amendment and approval of the WUA Constitution - WUA formation at all levels - Consultation at all levels - Cost sharing basic for Essential Structure Improvement (ESI) <p style="text-align: center;">NGO/DOI</p>	<p style="text-align: center;"><i>DOI responsibility</i></p> <p>←</p> <ul style="list-style-type: none"> - Rapid Appraisal Report - Bench marking Report - Asset Management Plan - Financial Management Plan - Participatory ESI Plan - Agriculture Development Plan <p style="text-align: right;">DOI/Consultants</p>

Agreement between DOI and WUA



General Principles of agreement between the farmers WUA and the DOI.

1. The main canal and the head work shall be the responsibility of the DOI field office . The farmers take responsibility of operation, maintenance and management of the canals and structures below main canal like secondary and tertiary canals.
2. The DOI field office make sure the delivery of assigned quantity of water at secondary canal and distribution of water within secondary will be the responsibility of the secondary canal WUA
3. The maintenance responsibility of the main canal and the headwork will be the responsibility of the DOI and secondary and below will be the responsibility of the Secondary canal WUA
4. The improvement of the infrastructures for water delivery and management will be undertaken with joint consultation. After this initial improvement, the maintenance and management of the infrastructure will be the responsibility of the WUAs of the secondary.
5. The resource mobilization for the maintenance of the secondary and below will be the responsibility of the secondary level WUA.
6. The service fee have to be collected by WUA in order to ensure proper maintenance of the canals below secondary. The WUAs have to take the responsibility of increasing the water fee rate and collect them strictly.
7. Failure to meet the terms and conditions on both part will be the subject to punishment. The punishment procedures are to be spelled out by both parties.

Assisted by NGO/AO/CO



Agreements between DOI and WUA specifies

- System and level for IMT
- WUA role and status
- Canal operation procedure & documentation of responsibilities
- Responsibilities of DOI
- Water fee fixation and collection
- WUA capacity development
- Inventory of Asset of the System
- Participatory ESI
- Resource mobilization (cost sharing basis)
- Termination of agreement

IMT by signing agreement between DOI and WUA guided by PDO and Consultant



Stage 3: Institutional Strengthening

Institutional Development and Irrigation System Improvement

WUA Institutional Development

WUA of all level in place by election
Registration of WUA.

- Organizational capacity improvement
- Leadership at different levels
- Rules & Regulations of the WUA
- WUA recording system
- Effective planning, implementation & monitoring.
- Operational Plan Implementation
- Financial management
- Maintenance Plan implementation
- Implementation of water distribution Schedule
- Agriculture Plan Implementation

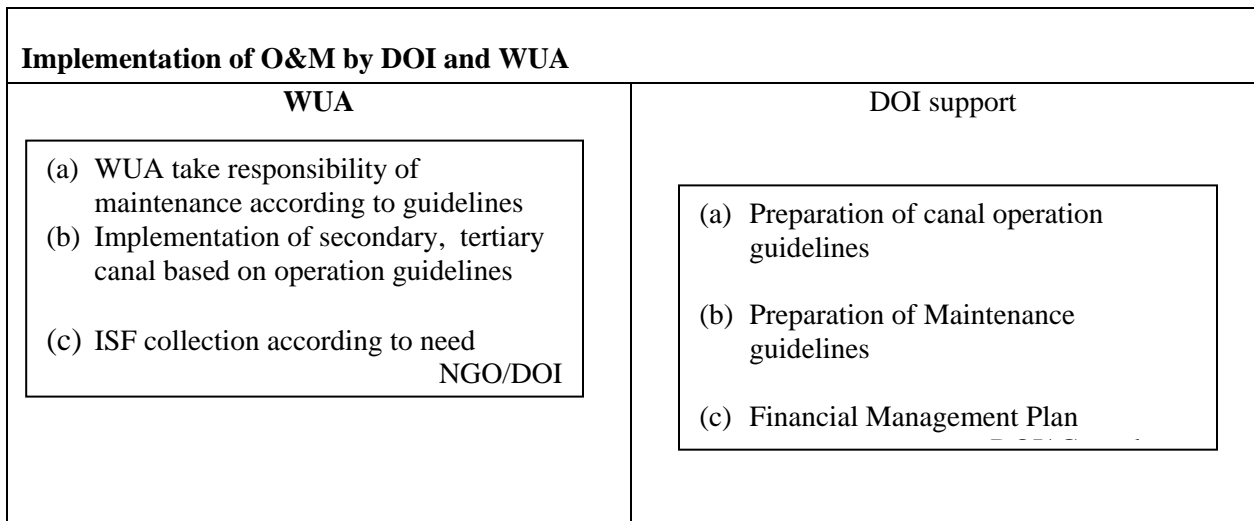
Assisted by NGO/ DOI

Irrigation System Improvement

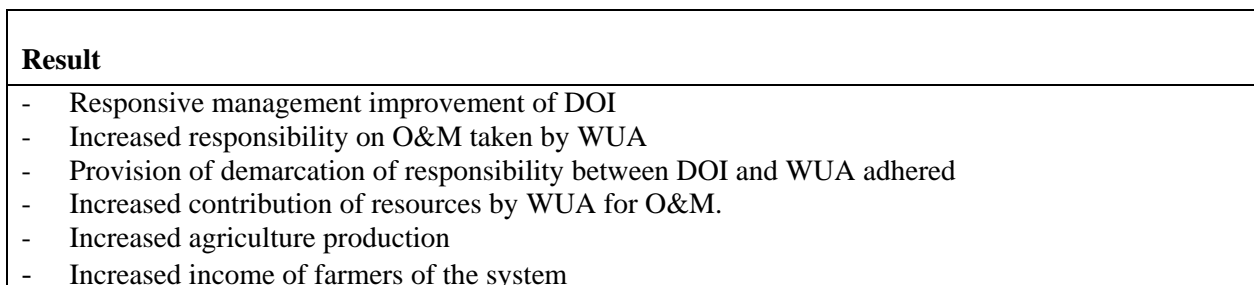
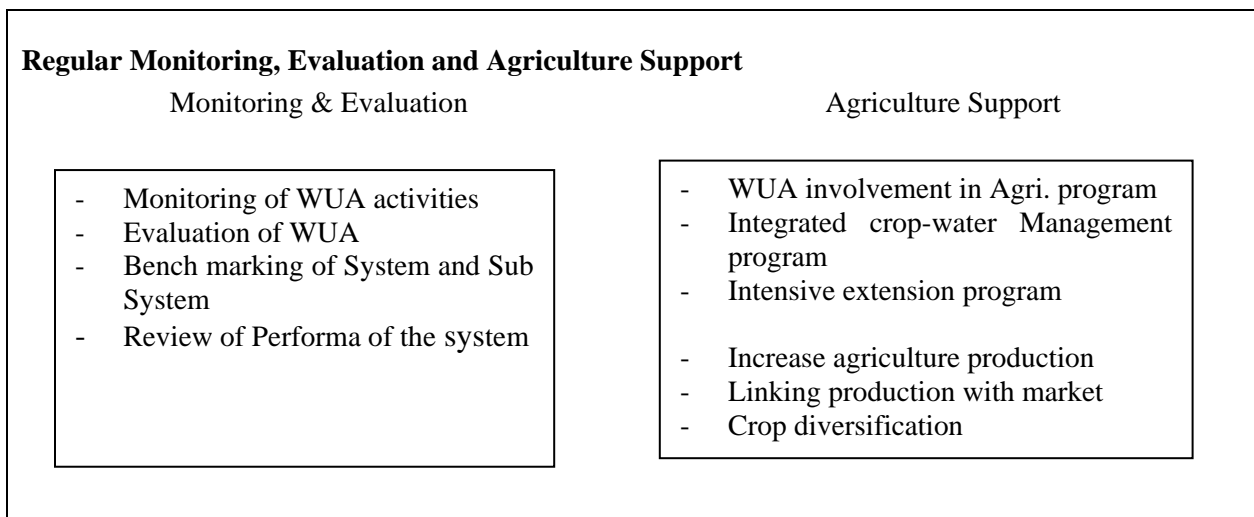
- Prioritization of ESI through WUA participation
- Implementation of ESI through WUA participation
- Flow measurement at different level
- Water distribution schedule
- Implementation of Asset Management Plan
- Program for water use efficiency

DOI/ Consultants





Stage 4 : Monitoring , Evaluation and Agriculture Activities



Observations on WUA in those two Projects

In CMIASP, the WUAs to be strengthened are mostly of farmer managed irrigation systems. They have been running the systems on their own independent of Department of Irrigation. The proposes participatory irrigation development along along with infrastructure improvement and strengthening the capacity of WUA for O&M activities and other livelihood improvement programs. In implementing the objective of the project, responsibility to strengthen WUA is given to NGOs. NGOs at the initial stage were ineffective in identifying the ways and means to strengthen WUAs. Hence, CMIASP prepared a detail manual for NGO social mobilization and WUA formation.

Design principles are good guides to strengthen WUA. However, Will NGO be an appropriate catalyst to strengthen WUA with those design principles?

In the case of Irrigation Management Transfer to WUA, these WUAs are in existence under the guidance and support of irrigation agency. Oftentimes, they work as the extension of irrigation agency. One would observe that these WUAs are dependent on the irrigation agency, lack of initiative and deprive of grass-root base.

The challenge is to turn WUAs under agency managed irrigation systems to be dynamic, responsive and willing to take initiative to manage the irrigation systems at certain level. How can that transformation take place ? How can those design

principles be incorporated in those agency guided WUAS under irrigation management transfer?

(a) Role of Department of Irrigation (DOI)

The role of DOI in strengthening WUA can be positive provided that DOI has dedicated unit to strengthen WUA as an autonomous, self-governing, self-supporting and self-regulating entity. Unfortunately, DOI does not have dedicated unit for this purpose. DOI is more motivated towards infrastructure development. The provisions of Irrigation Regulations are also not conducive to autonomous functioning of WUA. DOI intends to develop WUA as an extension of its unit. Hence, the development of WUA with those design principles has not been the agenda of DOI.

(b) National Federation of Irrigation Water Users Association of Nepal (NFIWAN).

This is an association which brings many WUAs together in Nepal. A federation of these associations is formed to safeguard the interest of WUAs. However, federation has not been active in strengthening WUAs in managing irrigation units at the system level. The federation has been more of a forum of big landlords of large irrigation systems. Hence, NFIWAN acts as the extension of DOI as contractor on behalf of farmers and support the political agenda of

political parties. NFIWUAN has yet to act to articulate the interest of general farmers of irrigated agriculture of Nepal.

© Conclusion

The participatory irrigation management with dynamic WUAs imbibing those design principles has contributed for better performance of those systems. Some of the WUAs have adopted the features of design principles. Many of those irrigation systems of CMIASP and IWRMP (IMT) have yet to transform into dynamic WUAs. The NGOs are employed as catalysts to bring transformation in those WUAs. The DOI and NFIWUAN have yet to change their roles to help WUA strengthen so that they can be self-regulating, self-governing and self-supporting organization.

APPENDIX 1 : WUA CHECKLIST

A. Checklist to collect information on WUA status.

1. Is there users list in the system? (If yes, please attach a copy of users list)
2. Is the irrigation area defined?
3. What is the size of the command area?
4. Is there first water right? (in terms of the command area)
5. Is there second water right? (in terms of the command area)
6. How is the maintenance of the canal done?
7. When is it done?
8. Who takes leadership to mobilize users for maintenance?
9. If the users do not contribute (cash / labor) for maintenance , what will happen?
10. How is the users members informed the date and time of maintenance?
11. How is water distribution done?
12. Who and how water distribution is decided?
13. Is there system of punishment for water stealing?
14. Is there system of fine collection for the defaulters who fail to contribute labor for maintenance ?
15. How is water distributed?
 - a) continuous flow
 - b) rotation system
 - c) might is right
- 15a. Do they have the same water distribution system in all seasons?
If different , when and how?
16. Who supervises the water distribution schedule?
17. Does the meeting of general assembly take place?
18. If yes, how many times a year?
19. Is there WUA committee?
20. How many members in all ?
21. How many women members in the committee?
22. How about dalit representation?
23. Is there representation of occupational caste groups?
24. How are the members elected or selected?
25. How often meeting of WUA committee takes place?
26. Does the WUA have written constitution?
27. Is the WUA registered? Yes / No When and where ?
28. Are the decisions of the meeting minuted / recorded?
29. Who keeps the record of income and expenditure?

- 30 Who keeps the record of labor mobilization for maintenance?
- 31 If conflict arises during water distribution, who settles such conflicts?
- 32 How often such incidents occurs in a year?
- a) During paddy cultivation
 - b) During winter
 - c) During spring
33. Are there other users committee in the command area? Like
- a) Drinking water management committee
 - b) Forest Users Committee
 - c) School management committee
 - d) Cooperative societies
 - e) Saving groups
 - f) farmers groups like vegetable grower groups, etc
- 34 What are the strengths of the WUA?
35. What are the weaknesses of the WUA?

B. Checklist to collect information on Socio –ethnic composition in the irrigation system.

1. What are the major ethnic groups in the command area?
2. How many households belong to these different ethnic groups?
3. What are the minor ethnic groups in the command area?
4. How many households belong to these minor ethnic groups?
5. How many occupational caste groups exist in the command area?
6. Give the breakdown of their households
7. List the woman headed households in the command area?
8. Migration pattern of the people ?
9. Pattern of migration:
10. Long Time
11. Short Time
12. Inside the country?
13. Outside the country? Where ?
14. How many men have gone out for job?

15. How many women have gone out of the command area for job?
16. What are the sources of external remittances?
17. Employed outside the country?
18. Employed inside the country?
19. How far is the nearest market place?
20. Besides engaging in agriculture, what other activities are practiced by the members of the farming community?
21. Is there any industrial town near the command area of the irrigation system?
22. Are the farmers employed in those industrial establishments?
23. Is there any cottage industry within the command area or nearby?
24. What other potentiality exists?

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