Stakeholder Consultation and Water Governance: Lessons from the Melamchi Water Transfer Project in Nepal[1]

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Glossary

1 MLD	0.01157 Cumecs
BDS	Bulk Distribution System
BPC	Butwal Power Company
CAPRi	Collective Action and Property Rights
CBO	Community Based Organization
CPWF	Challenge Program on Water & Food
DDC	District Development Committee
DIO	District Irrigation Office
DNI	Distribution Network Improvement
DWRC	District Water Resources Committee
EIA	Environmental Impact Assessment
EMP	Environment Management Plan
FMIS	Farmer Managed Irrigation System
Ghatta	Traditional water mill used for milling grains
Ha	Hectare
HMG/N	His Majesty's Government of Nepal
HP	Hydro Power
INGO	International Non Government Organization
IP	Irrigation Project
IRR	Internal Rate of Return
IWMI	International Water Management Institute
JICA	Japan International Cooperation Agency
KM	Kilo Meter
Kut	Rent
KV	Kathmandu Valley
KW	Kilo Watt
LCG	Local Consultative Group
LGP	Local Governance Program
M	Meter
Majhi	Fisherman
MCG	Melamchi Consultative Group
MDS	Melamchi Diversion Scheme
MDWS	Melamchi Drinking Water System
MLD	Million Liter per day
Msl	Mean Seal Level
MWSDB	Melamchi Water Supply Development Board
MWSP	Melamchi Water Supply Project
NGO	Non Government Organization
NGOCW	NGO Co-ordination Workshops
NGOPP	NGO Participation Plan
NPC	National Planning Commission
NRs	Nepali Rupees
NWSC	Nepal Water Supply Corporation
NWSRB	National Water Supply Regulatory Board
O	Ongoing
P	Planned
PHP	Public Hearing Program
PRT	Public Relation Team
RAP	Resettlement Action Plan

RBC	River Basin Committee
RBO	River Basin Organization
SMEC	Snowy Mountain Engineering Corporation
SUP	Social Upliftment Programme
UNDP	United Nations Development Programme
US$	United States Dollar
VDC	Village Development Committees
Water Mill	Mill with hydro powered turbine used for milling grains and electricity generation
WECS	Water and Energy Commission Secretariat
WHO	World Health Organization
WTP	Water Treatment Plant
WUO	Water Utility Operator

Conversion Rate

US$ 1 = NRs. 72.50

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Abstract

This paper intends to highlight the dynamics of one of the major water transfer project in Nepal with an objective of looking into the processes applied for the involvement of local stakeholders. The paper also describes about the existing water use activities at the local level with focus on the water right of various stakeholders and how this has helped in development of institutional arrangement at the local level and the likely effect of the water transfer on it. The consultation process, although initiated lately, has helped in rapport building between the project and local stakeholders. This has ensured their participation in the project activities. The paper concludes that the stakeholder consultation process needs to be initiated at the beginning of the project help build institutions at local level that could cope with the changes.

Key words: water transfer, water right, water use, institution, stakeholder consultation, participation

1. Introduction

The Melamchi Water Transfer Project (Figure1) (http://www.melamchiwater.org) is in implementation since 1998 by His Majesty's Government of Nepal (HMG/N) to transfer water from the Melamchi River of Indrawati Basin into water-short Kathmandu Valley (KV). The aim is to provide 24-hour water supply for Kathmandu Valley, which has been severely suffering from the shortage of drinking water for a long time. The average daily demand of the KV is 180 million-liters per day (MLD[4]) at present, which is projected to increase to 510 MLD by 2018. The Nepal Water Supply Corporation (NWSC) can supply only 120-140 in the rainy season and 80-90 MLD during the dry season at present. The first stage of the project is designed to divert 170 MLD of water per day from Melamchi. In the second and third stages it is proposed to add 170 MLD of water each to the first stage by diverting water from Yangri and Larke rivers of Indrawati Tributaries. Melamchi Water Supply Development Board (MWSDB) constituted by the government is responsible for the implementation of the project activities.

2. Objective

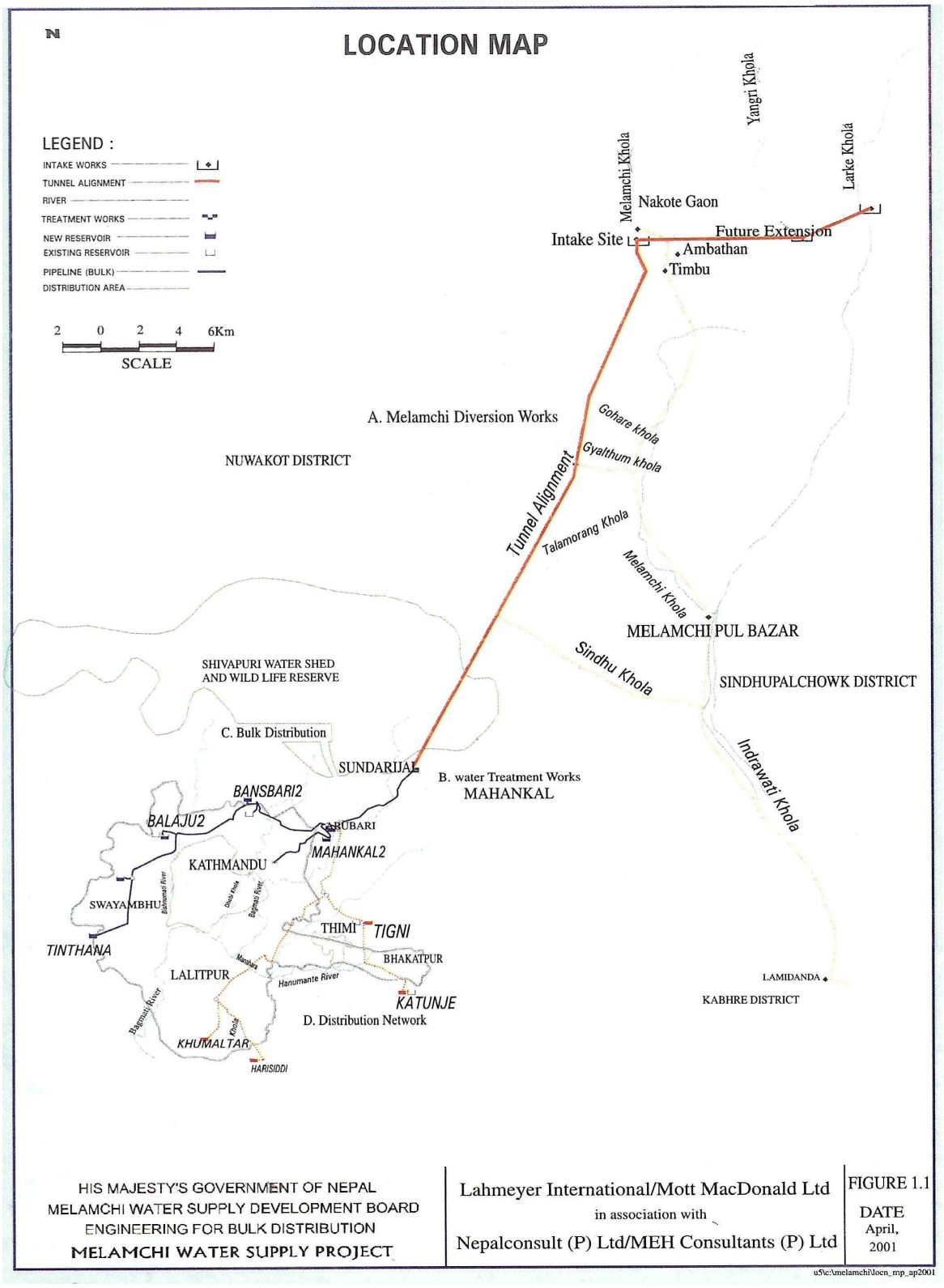
The overall objective of the study is to understand the possible impact on water user groups due to the implementation of this large scale water transfer project and on the the degree of water scarcity, and effect on environment. Also, the study sought to determine the role of stakeholder and local governments in decision making process, the mechanisms adopted for negotiations with stakeholders and the compensation package to the locals for the implementation of Melamchi Water Supply Project (MWSP)[5].

This paper will try to answer the following questions

a. What are the mechanisms adopted for negotiation by various groups of stakeholders and their involvement in the decision-making process?
b. How are various institutions involved in decision-making processes and implementation of MWSP?

[4] 1 million liter per day(MLD)=0.01157m^3/sec
[5] MWSP-Melamchi Water Supply Project is executed by HMGN/MWSDB.

Figure 1: Location Map of Melamchi



c. What are the strategies applied by the locals to reduce any potential loss after the MWSP?
d. What are the key lessons-learned from this project?

3. Methodological Approach

The study was exploratory in nature to understand various aspects of intervention processes of the MWSP and its impact. The information was collected through primary and secondary sources.

Primary data collection

Primary data were collected through:

- Field observations of water use practices, such as visit to irrigation systems, *Ghattas*[6], water mills for grinding and hydropower facilities in the *Melamchi* basin.
- Interview with key informants at local levels and national levels using unstructured questionnaires and checklists.
- Group discussions and interviews with the concerned water users, water users associations, local political leaders, NGOs representatives, women's groups, school-teachers and others.
- Cross-checking of field information with local government officials, such as District Development Committee (DDC), District Irrigation Office (DIO), District Drinking Water Supply Offices, District Forest Offices.
- Geo-reference data collected from Local Governance Program (LGP/UNDP), Kathmandu.

Secondary data collection

Various available reports on the Melamchi Project were reviewed. Major sources are the MWSP's publications, consultants' reports, and publications of NGOs and pressure groups. Information from interviews by relevant officials and consultants published in the National newspapers were also collected.

4. Overview of Melamchi Project

The Melamchi River is in the Indrawati River basin located in the central region of Nepal, 40-km northeast of the Kathmandu valley. The Indrawati River Basin is extended from latitudes $27^0$37'10" to $28^0$9'45" N and $85^0$26'32" to $85^0$14'5" E. It originates from mountain regions of *the Mahabharat* range (5863 m above msl). Some upper parts of the river basin are permanently covered by snow.

Table 1: MWSP Project Affected VDCs

VDCs within the Melamchi Basin	VDCs out of the Melamchi Basin
Helambu	Melamchi
Kiul	Thakani
Ichowk	Haibun
Mahankal	Bhotechour
Palchowk	Sindhukot
Dubachaur	Bansbari
Talamarang	Phateksila

[6] Traditional water mill used for milling

The basin area is 330 km^2, the length of the river is 41 km and it has 14 major tributaries. The basin is contained within eight Village Development Committees (VDC) of Sindhupalchowk district. However, the 14 VDCs (Table 1) have been designated as project affected area. The average annual precipitation at higher elevation *Sarmathang* is 3874 mm and the temperature ranges between 5 and 32°C. The annual average flow of the Melamchi at planned diversion point is 933 MLD (10.79 cumecs) and the average discharge in the dry season (March/April) is 256 MLD (2.96 cumecs).

The population density of the basin is 165 People km^2. Ninty six percent of the population is involved in agriculture and the average farm size per household is 0.9 ha. Major crops grown in this basin are paddy, wheat, maize and millet with an average yield of 3, 2, 2.45 and 1.7 metric ton/ha respectively. The major attraction of the basin is the Langtang National Park at the head region and it also offers popular trekking routes for tourists in Halambu area, which is one of the pioneer trekking routes of Nepal.

The total project costs are estimated at US$ 464 million. About 30 % of the project financing is committed by the multilateral and bilateral donors as grants, and about 45 % by the World Bank and the Asian Development Bank as loan financing. His Majesty's Government of Nepal will finance the remaining 25 % of the project costs.

4.1 Project Components

The project comprises three major components (MWSDB, 2000) and they are:

1. Physical Infrastructure Development

Under this component various activities will be implemented. The salient features including the physical component of the MWSP are presented in Table 2.

2. Social and Environmental Support

The MWSP is implementing a package of prgrammes to mitigate the negative effect of the project and also to provide compensation for the loss of property and means of livelihood through income generation activities. Besides, the project is investing on road construction and electricity transmission line, which will have positive effect on the livelihood of the people in terms of easy access and better lifestyle. The total compensation package is US$18.33 million. The activities under compensation packages are discussed in the following paragraphs.

Resettlement and Land Acquisition

Resettlement Action Plan (RAP) is one of the compensation activities, intended to compensate permanent land acquisition that includes land acquisition for road construction and other project works- Water Treatment Plant, Bulk Distribution Systems and pipeline route, and sewerage system improvements. It is expected that 160 ha land and 246 households will be affected either partially or entirely, including 25 households that will be displaced. The project will provide direct financial compensation to those whose lands are acquired for the project work and pay rent for the lands, which are rented for project. A total of $15 million is allocated for this activity. This also includes the construction of a hospital, a road, and school services in the local communities.

Table 2: Project Salient Features

S. N.	Features	Unit	Description
1	Project name		Melamchi Water Supply Project (MWSP)
2	Executing Agency		Government of Nepal, Ministry of Physical Planning and Works, Melamchi Water Supply Development Board (MWSDB)
3	Project Duration	Year	6 year (July,2001-July,2006)
4	Estimated cost	US$	464 Million
5	Internal Rate of Return	%	13.5
6	Financiers/Donors		Asian Development Bank –US$ 120 million; World Bank- US$ 80 millions Other Bilateral donors - US$ 146 millions His Majesty's Government of Nepal (HMG/N) - US$ 118 millions
7	Source of Water		Stage I: Melamchi River (perennial) in HELAMBU VDC of Sindupalchowk District located 40 KM north east of Kathmandu Stage II & III: Yangri and Larke (tributaries of Indrawati)
8	Major Components of Project		Melamchi Diversion Scheme (MDS): Including access road and tunnel adit, a diversion weir of 5-7 m high, control system and sediment exclusion and 26.5 km long tunnel starting from Ribarma to Mahankal, Sundarijal VDC in Kathmandu. Water Treatment Plant (WTP): Conventional gravity water treatment plant will treat the water to WHO drinking water standards through the process of chemical flocculation, sedimentation, filtration and chlorination. The plant will be located at Sundarijal VDC, on the outskirts of Kathmandu City. Bulk Distribution System (BDS): Treated water will be conveyed by a network ductile iron pipes of between 300 and 1400 mm in diameter to reservoirs built at high locations. Distribution Network Improvement (DNI): Distribution to the consumers by a rehabilitated and extended network ensuring quality and equitable distribution, and reduction of leakage and wastage.

Source: (HMGN/MWSDB 2000)

Social Upliftment Program (SUP)

The income generation for poverty alleviation and infrastructure development to provide better access and facilities to the local people is also the major component of MWSP compensation package. The activities include literacy, income generation and women empowerment. The allocation of US$3.33 million is for income generating activities for poverty reduction and equity-related projects. The SUP is implemented through the direct participation of beneficiaries by involving Local Governance units-DDC/VDCs, as this will ensure benefits to those directly affected by the project besides, contributing to the capacity building of District Development Committee (DDC) and Village Development Committees (VDC). The first phase of this activity has started in 2003.

Environmental Management Plan (EMP)

The activities included under this program were (HMGN/MWSDB, EIA report, 2000).

- Mitigation of civil construction related impacts
- Mitigation of outside civil construction related impacts
- Provision of at least 35 MLD (0.4 cumecs) in the driest season downstream of intake

3. Institutional reforms

The activities identified under this program are:

- Establishment of National Water Supply Regulatory Board (NWSRB).
- Restructuring of Water Supply Corporation and establishment of Water Authority to oversee the water supply services and regulation.
- Establishment of Water Utility Operator (WUO) through license from Water Authority.
- Enactment of groundwater licensing in the Kathmandu Valley.
- Participation of private sector for water and waste water management in Kathmandu Valley.

5. Key Institutions

Various institutions from district to the central level have stakes in the project. Therefore, they have direct or indirect influences in shaping the outcome of the project.

5.1 District Development Committee (DDC)/Village Development Committee (VDC)

The District Development Committee (DDC) and Village Development Committees (VDC) are the highest and lowest level of elected institutions respectively at District level. Their constitutional role however in planning and regulating water resource development is very limited. VDC and DDC however, are the focal point for all other developmental activities in the village and district according to the Local Governance Act (1998). They provide support for Farmer Managed Irrigation Systems and very recently to the installation of micro-hydro in the district. The local elected representatives of DDC and VDC were apprehensive that they were not consulted during the planning and design of the Melamchi Project, although the water is being diverted from their area. This illustrates the contradictions in the role as envisaged by the government agencies and local elected institutions. They in fact could have played an important role in establishing linkages between the local people and the project authority.

The absence of a water authority at the local level has significantly affected the institutional linkage between the local people and the project authority. The District Water Resources Committee (DWRC), constituted by the government has the mandate to plan and develop the water resource in the district but it is dominated by the government officials and meets under the Chairmanship of Chief District Officer when necessary. As a result, locals are not aware of its functions and it does not have its own mechanisms to assess the need of local people.

5.2 NGOs

Altogether 65 NGOs/CBOs and user groups have already been formed in the Melamchi basin areas that are concerned about the Melamchi Water Supply Project activities. Most of the NGOs have been instrumental in raising the voice of the locals who were not organized. They

have been establishing contact with government and donor agencies to voice their concern. The NGOs Participation is the acknowledgement of their role in project implementation. The involvement of NGOs in this type of project is a positive aspect in terms of bridging the gap between the local people and the project authority. The involvement of NGOs in water resource development is expected to add new dimension in the water governance in the country in the long run. This is another positive contribution of the Melamchi project in institutional development and establishing the local participation norms even in a mega water project in Nepal.

5.3 National Level Stakeholders

Government

Government has a major stake in the completion of the project in time. However, the project is already behind schedule. It was to be completed in 2006 but project is progressing slowly because of delay in employing contractors for construction of access road and in the initiation of institutional reform of water distributing agency (National Water Supply Corporation) of the government. Management contract of the agency for improved services is one of the criteria for disbursement of funds from the donors. According to the information obtained from the project, the new completion date is 2009. And also, in recent years, the implementation of the project is delayed due to the Maoists insurgency.

Donors

The donors also have a major concern in the completion of the project. Since it was a major water transfer project, the timely completion of the project was important. However, their patience seems to be running out due to delayed project implementation and cost over-runs.

Users of Kathmandu

The people of Kathmandu will be the users of the water transferred from the Melamchi area. Their expectation of receiving sufficient water does not seem to be fulfilled in near future. But they have little influence in the outcome of the project. They are the one who have to pay for the water services. What should be the basis for tariff fixation and whether the Kathmanduites are willing and capable to pay for increased tariff has never been discussed publicly. In fact they are the passive recipient of the project outcome. The initiation of dialogue with the Kathmanduites would have been facilitated by the establishment of Water Authority as envisaged in the project. Some of the NGOs in Kathmandu have raised voices in this respect.

6. Project Development Stages

The long awaited Melamchi project was identified during the preparation of the water supply master plan in 1973 as the potential water source for the Kathmandu valley. An Environmental Impact Assessment (EIA) study, conducted in 1989, recommended Melamchi as the best scheme to meet the long-term water supply demands of the Kathmandu Valley. A detailed feasibility study of the Melamchi scheme was commissioned in 1989 after it was determined to be the most feasible. Several studies on the socio-economic, institutional and technical aspects of Melamchi Water Supply Project (MWSP) were carried out by various organizations after its selection for implementation (Table 3).

Table 3: Feasibility Studies of Melamchi

Organization	Study
Binnie and Partners, 1988	Water Supply for Kathmandu-Lalitpur
SMEC,1991	Feasibility study for Melamchi scheme
JICA, 1990	Kathmandu water supply facilities improvement project
BPC,-Hydro Consult, 1996	Bankable feasibility study for the Melamchi, diversion scheme
Binnie Thames,1998	Water demand report

These studies were important in determining the viability of the project and help government for informed decision making. As a result the government and the donors decided to implement the project.

7. Water Users of Melamchi

The major stakeholders of the Melamchi project include various water users in the basin.

7.1 Water Users

The following water users are the primary stakeholders of the project. Their livelihood is dependent on the water availability in the Melamchi River.

- *Ghattas* and water mills
- Irrigation
- Drinking Water
- Fisherman (Majhi)
- Hydropower

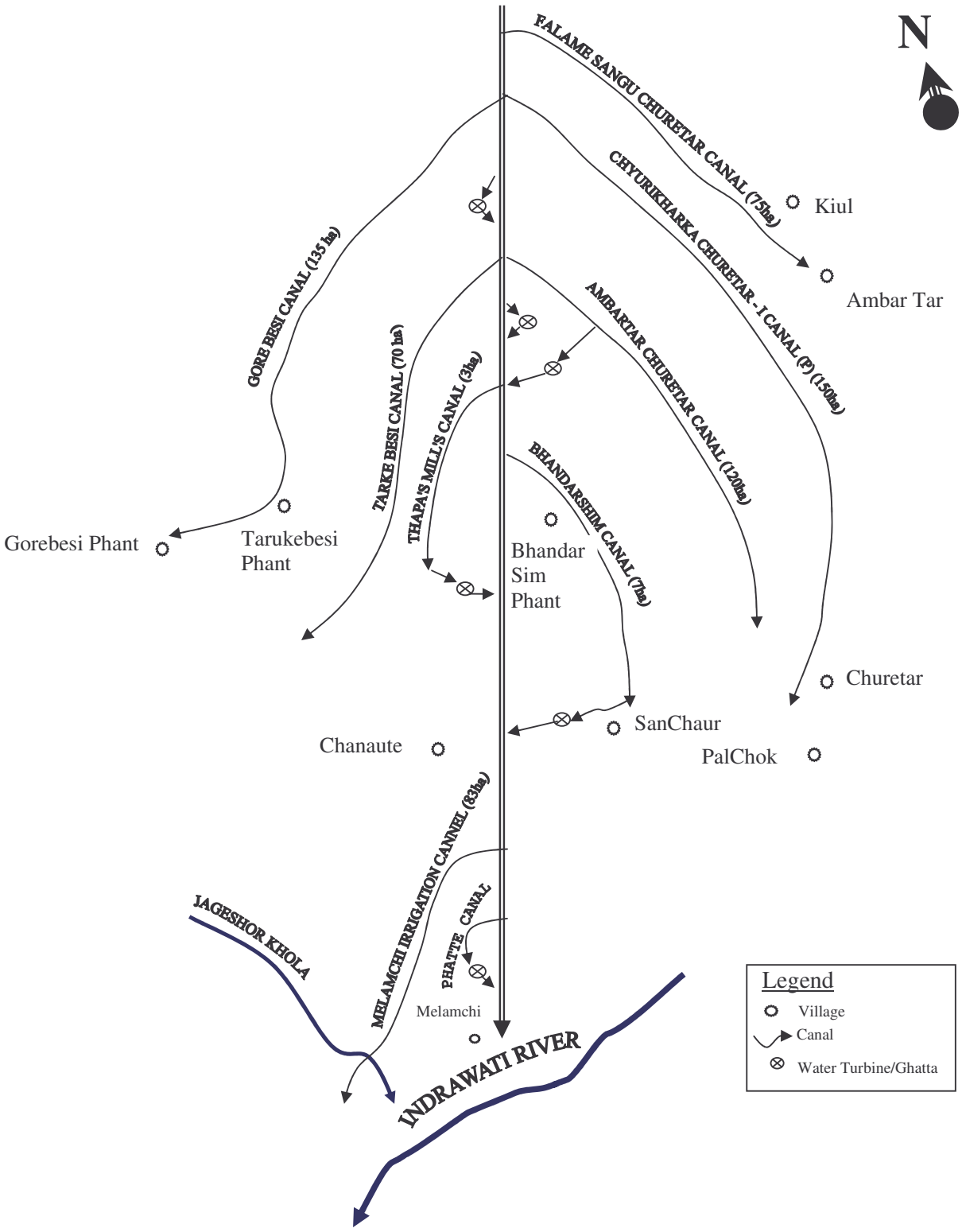
Ghattas and Water mills

A *Ghatta* is a water mill, which uses local technology for milling wheat, maize, and millet by using waterpower. *Ghattas* were established in the Melamchi valley many years back, utilizing local resources and skills. At present, there are 22 *Ghattas* driven by Melamchi water. *Ghatta* owners are usually from poor families and it provides an additional source of income to them. These *Ghattas* run from Nov-May. The *Ghatta* owners are unaware of how much water will be diverted and what will be the impact on *Ghatta* operation after the MWSP diversion. No government or any other organization has shown any interest in the possible impacts on the livelihoods of these G*hatta* owners, which is quite a serious issue. They fear that after the MWSP they might have to close down *Ghattas* and this may result in loss of their living and cultural practices. Locals have observed decreases in water flows over the last decade in Melamchi River. It may be due to several irrigation projects operating at present in the basin.

Irrigation

There are 19 Farmer Managed Irrigation Systems (FMIS) in the basin, which cover a minimum of 2.5 ha to a maximum of 150 hectare. About 591ha of land is under irrigation and the planned irrigation scheme will cover 125ha. Government and some International/Non Government Organisations (I/NGOs) have provided support for maintenance and improvement of these systems since the last 10-12 years. The major irrigation systems that will be affected by the MWSP are presented in Figure 2. These are the major canals supplying water either to irrigation or to the micro-hydro.

Figure 2: Major Irrigation Schemes in Melamchi Khola



The construction of access road (Melamchi Pulbazar - Timbu) damaged some parts of the irrigation canal. Since the last 15-20 years most of the farmers are attracted towards growing spring crops due to availability of irrigation water from the Melamchi River. But after the MWSP, they fear that sufficient water may not be available for the spring crops. That will affect 25 families at the tail end who are working as tenants for the last 7-generations. Usually, the main crop (summer paddy) and the winter crop (wheat and potato) are shared between the land owner and tenant and the spring crop is kept by tenant. This is important as the livelihood of the people living in the area is dependent on the availability of water. MWSP is giving less attention on the effect at micro level and the users are not taken into confidence. This shows lack of informed decisions making for mitigating measures by the project.

Drinking Water

None of the locals were fully dependent on the Melamchi River for drinking water purpose. Women in the lower reaches of the river will be affected as; river water is also used for drinking in the dry season. This situation occurs when the existing five taps which draw water from local springs by dries out from March to May. This fact was revealed from a group discussion with women groups in Melamchi VDC. It was also found that people dwelling near Melamchi River use river water for domestic use i.e. washing clothes, and also for livestock.

Fisherman (Majhi)

Fishing is not the main occupation of any of the people living in the basin. However, most of the poor families are involved in fishing in their spare time. The appropriate time for fishing is November-January. During this time they earn up to NRs. 500 per day. These fishermen opined that they might not have enough fish collection due to less flow of water after MWSP and might loose good income from this alternate source.

Hydropower

There are two small-scale, run-of-the-rivers, hydropower plants which generate 5–10 kilo watt of electricity that is distributed to the local villages. In the dry season, these plants are expected to be severely affected due to less water flow in the basin after the MWSP. This is because the first priority for water use is for irrigation.

8. Water Rights and Water Use[7]

Water use rights in Melamchi River are practiced in following ways.

- Customary practice based on first use
- Physical position of the agricultural plots (priority to head-enders), and
- Social norms (based on social needs and social values).

This is similar to the prior appropriation rights for allocation of the water resources[8]. Adherence to their customary practice has been so far effective to cope with the new water resource development at the local level. The norms established by the users have assigned the highest priority to irrigation, followed by *Ghattas,* and water mill. In recent years the

[7] Water right discussion is based on the paper 'Local Water Management Institutions and the Bulk Intersectoral Water Transfer: A Case Study of the Melamchi Water Transfer Project in Nepal by Dhruba Pant et al 2005, submitted to working paper series publication of CAPRi

[8] In fact, under the customary practice, both riparian and prior appropriation type of water resources allocation practices are followed depending upon the convenience.

communal rights over water is becoming more important than private water rights due to the installation of micro-hydro. The rights of some of these sectors could be affected in future if adequate water is not available in the Melamchi River after the diversion. The bulk transfer of water is expected to impact the existing institutional arrangement of water allocation between various uses due to reduced flow. In that case the users will have to develop new institutional arrangements.

The Water Resources Act of 1992 bestows all the rights of water to the government who then decide how that water should be allocated. The Act recognizes only the use right but not the ownership right of the local communities. In the case of Melamchi project, the government has decided to allocate water to meet the water need in Kathmandu through the government subsidiaries. In this context, the likely changes in the water right of the users are expected in the following ways.

Customary vs. acquired water rights

The Users are mobilizing their own resources to install micro-hydro for electricity with the support from the government and United Nations Development Programme (UNDP). Therefore, they have obtained consent from prior/existing users-irrigation users and mill owners. Installation of a micro-hydro plant involves substantial investment through community resource mobilization. In the case of reduced flow in the river after the water diversion, the micro-hydro users may have to forgo their newly acquired water rights. The Project could potentially affect the micro-hydro users downstream of the project site and their quality of life.

Negotiated rights

The mill owners have negotiated with the irrigation users for the water rights to drive their mills. Mill owners only have the rights to use and their rights are secondary as they have to close the mill and let the farmers irrigate the field during times of low flow.

Land based rights

As discussed earlier, the water rights in the basin, as well as in other parts of Nepal, are mostly linked with land rights. The reduction in the availability of water would affect the cultivation of spring paddy and this may reduce the employment opportunity for the tenants who have rented land. This will have implications on equity on resource sharing between land owners and tenants, as they do not have to pay rent to the landowners. This could have significant impacts on the local economy if alternatives are not available.

Non land-based rights

The field study showed that the prior use right of *Ghatta,* is not enforced in practice during the low-flow season although it is recognized. The *Ghatta* owners lack strength to establish their right against the powerful irrigation users. The *Ghatta* owners will be adversely affected if there is not enough water left to run the *Ghattas*.

9. Local Demands

The local stakeholders have several demands to compensate for the resources they are sharing and clarifications form the project authority on project related activities. They include:

- First of all they would like to know how much water would be left downstream of the dam, as this is important for the water rights and environmental rights of the local

people. The locals want government assurance in written form since they assume that the environment flow will not be sufficient for existing and future water uses in the Melamchi area.

- Secondly, they are demanding representation from the local bodies to Melamchi Water Supply Development Board so that they could participate in the decision making. Besides, they are asking for appropriate co-ordination mechanism from village level to government level for the monitoring and evaluation of the project.
- Thirdly, they would like to ensure that 5% of revenue collected from the consumers of the Kathmandu valley should be spent for the integrated development of Melamchi valley. As part of reasonable compensation and resettlement packages, they have demanded program related to poverty alleviation, health improvement, environmental protection and program for strengthening local skills for the project affected people.
- Likewise, they are demanding first priority for employment and contracts in project works to the locals along with the adequate insurance coverage of the human and other properties for possible loss before the construction works. In this connection, they are also demanding flood protection measures on both sides of river to ensure the safety of locals in case of break down of Melamchi Diversion Scheme

10. Stakeholder Consultation Process and local involvement

This section discusses the various steps that the project has taken to inform local users and elicit their participation in the project implementation. The project is centrally planned and implemented by the government agencies through the international and local contractors resulting into lack of consultation with local users during the planning stage of the project. It was learnt that there was disagreement between the locals and the project authority in compensation distribution also with respect to the pricing of land that has to be acquired for project activities. However, this was settled through the Local Administration, as it is responsible for determining the compensation package for lands taking into account of its location.

Therefore, the project initiated discussions with NGOs for their involvement, as it would help establish good rapport with the local people during the implementation of the project.

Negotiation processes and outcomes

Local Stakeholders were informed formally about the launching of Melamchi Project in 1998 by Project Engineer in a Public Hearing Program (PHP) held at two places- Local High School and local Bazaar.

MWSP representatives assured the locals of the following issues in the PHP.

- Enough water will be left in the downstream of MDS, to fulfill the water demands of the Melamchi Valley people. However they did not specify the quantity.
- Construction of one 15-bed hospital and a higher secondary school
- Metalled road from Lamidada to Timbu.
- Protection of the environment.
- Provision of employment opportunity to the locals.

The assurance given by the MWSP officials shows the issues/concern raised by the local people. The first concern of the locals was the enough availability of water in the river for present and future use of the users in the basin. However, being a highly technical issue, the locals were not satisfied with the answer from the officials. Water accounting study by IWMI

(Mishra 2001) shows that the overall water balance in the basin after transfer is adequate for present uses. That scenario is projected taking into account of overall situation of the basin but it does not take into account the situations at various confluences of the Melamchi River and future uses. The project had not carried out study at the micro level; therefore, the project officials were not in a position to answer the concern of users at different locations of the project. But it is more likely that the water availability during the dry season could be a problem considering the minimum flow that project has proposed.

There was always a tendency among the locals to acquire facilities from the project which they have not been able to receive through regular channels. This is the tactics employed by the local people during the negotiation with project officials.

NGO Participation Plan

Four NGO Co-ordination workshops were organized by MWSP to identify issues and work out possible areas of NGOs involvement in the project activities. Perhaps this is the first time that a government owned project in Nepal has recognized the role of local NGOs in the implementation of the project activities. This should be taken as a positive step in the process of increasing local participation, which is often ignored in the government implemented development program. The NGOs during negotiation with project officials have been able to influence the project to develop a NGO Participation Plan (NGOPP). This shows their effectiveness in making the voice of the locals heard.

Table 4: Major Events on NGO Co-ordination Activities

Workshop	Main them	Date Organized
First NGO Co-ordination Workshops (NGOCW)	Identification of project issues	August 9,1999
Second " "	Information collection from concerned NGOs	October 6,1999
Third " "	Classification of issues/prepare short list	December 17,1999
Fourth " "	Collect information on program issues	February 22,2000

Source: MWSP Publications, 2000.

A proactive public relations campaign was conducted by MWSP to bridge the gap between local stakeholders and the MWSP and to highlight the project works through the deployment of a Public Relation Team (PRT). NGOs are mobilized to assist local government agencies in implementing community-based activities. To ensure ownership and sustainability, the SUP is:

- Taking a participatory approach through direct participation of beneficiaries.
- Involving the local institutional structure of DDCs and VDCs.
- To be run by royalties paid by the Kathmandu Valley water users in the post construction stage.

The NGOPP targets women and children in general and people from the disadvantaged, marginalised and occupational communities of the project-affected area in particular. Activities cover areas such as poverty alleviation, vocational training, awareness, education, environment and rural tourism promotion. The micro-finance program in partnership with a specialized microfinance institution or bank is also planned for implementation.

Local Consultative Group (LCG) at Melamchi valley

This group will consist of a 15 member committee from the 14 project affected VDCs. Half of the representatives must be women. The VDC chairman will be the leader of this group. The committee members will consists of representatives of one of the line agencies at local level, headmaster from one of the high schools, social mobilizer (women) and one of the representatives from MWSP field office from the project affected area. The representative from MWSP will act as member secretary of this committee.

The functions of this local consultative group are:

- To help in developing social up-liftment programs.
- To help in planning and implementing land compensation program to those whose land are acquired for project activities.

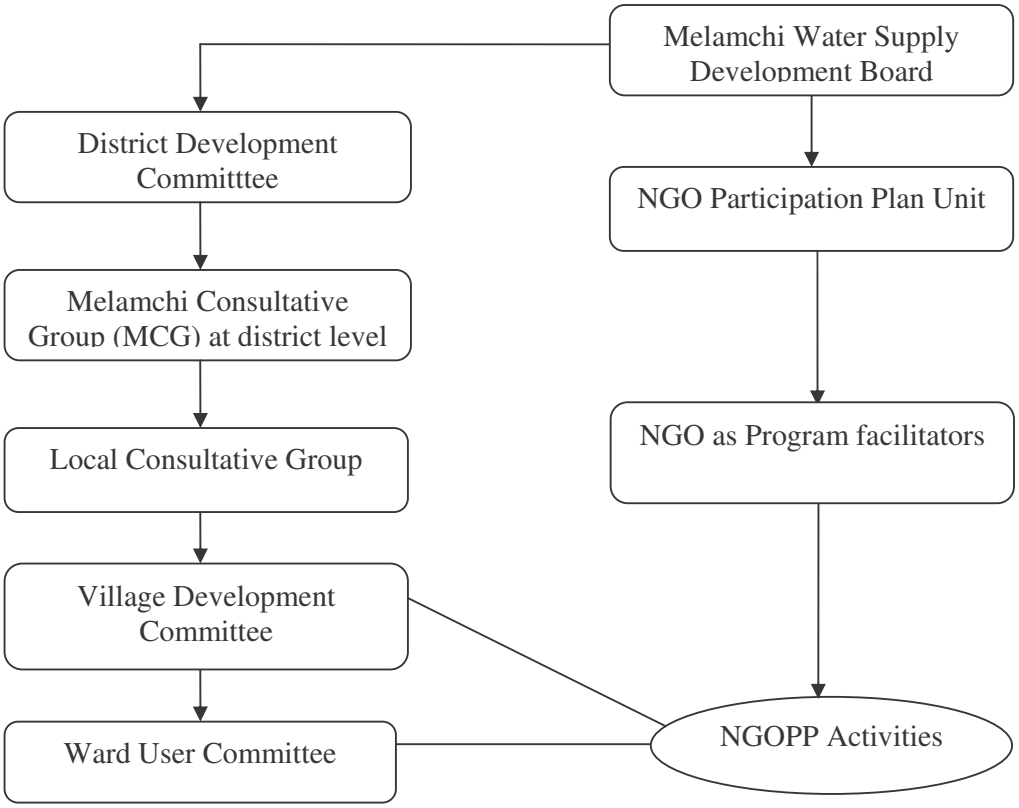
Melamchi Consultative Group (MCG) at District Level

Not more than 15 members including district level government officials of line agencies, DDC chairman, local members of parliament, 5 representatives from affected areas, are the members of the Melamchi Consultative Group. This group will provide advice on the implementation of various programs at the district level and will also monitor the implementation of activities.

Implementation arrangements

The mechanisms proposed to implement and monitor project activities at national, DDC, VDC and Ward levels are presented in Figure 3.

Figure 3: Implementation Structure of NGOPP in Melamchi Valley



Source: MWSP publications, 2000

The structure shows that effort has been made to involve local stakeholders in the implementation along with their participation in project monitoring activities.

11. Discussions and Conclusions

The Melamchi Water Supply Project is a large scale ($464 Million) water project in Nepal. The project was selected as the best scheme to meet the long-term water supply demands of the Kathmandu Valley. The project consists of three major components-Infrastructure Development, Social and Environment Support and Institutional reform. The inhabitants of Melamchi River Basin feel that their livelihoods will be severely affected by diverting water to Kathmandu, as they are not assured that the minimum flow proposed by the project would be sufficient. The locals feel that they were not consulted during the planning phase and their involvement was completely neglected. This shows that communication between project management and locals was at minimal in the beginning of the project. The implementation of the project is already lagging behind by three years.

Three major compensation packages like Social Upliftment Programme (SUP), Resettlement Action Plan and Environment Management Plan were incorporated in the project to address the socio-economic and environmental issues that would emerge during the implementation of project. It seems that heavy emphasis on infrastructure development at the initial stage has sidelined activities that directly relates to local livelihood because these programs are in implementation recently. This type of compensation package is provided for the first time in Nepal in case of water supply project. This is expected to reduce some of the grievances of the local people through direct impact in the improvement of their living standard. Nevertheless, it entirely depends on how these programs will be implemented and how successful it would be to help local people in minimizing the adverse effects.

Lately, the project has started consultation process with the local users and institutions because of the pressure from the local people. The project has initiated the processes to involve locals in the implementation of the project activities through NGO Participation Plan and Consultative Committees. The involvement of NGOs is remarkable because of the recognition of their role and involvement of local stakeholders in the government implemented project. This could have long term implications in the implementation of development projects in the country. This could be the realization by the project authorities that the implementation of project activities requires the support from the locals. The NGOs also could be instrumental in creating a forum where various stakeholders can come together and begin the consultation process for successful implementation of the project. The success of these NGOs lies in their effectiveness in building linkage with informal institutions functioning in the basin, which is not strong at present. This leaves a doubt whether they would be able to represent the concern of local people.

The involvement of the DDC and VDC is a positive step towards achieving the project objective, as it helps in building rapport with the local people. But still the role of District Development Committee (DDC) and Village Development Committees (VDC) is not clear. As a member of NGOPP implementation board, DDC and VDC could help in identifying and monitoring relevant activities. Their involvement would also help in coping with the changes at the local level. However, users groups and government institutions sometimes share conflicting relations with local governments. This may result into institutional conflict, if both begin to assert their role. Similarly, institutional conflict arises especially when resources fall into

jurisdiction of more than one ward (hamlet), VDC or DDC. This may affect the role expected from them.

The informal arrangements by the water users have prioritised the water use activities. In recent years, the water use activities in the basin are increasing due to the construction of new irrigation systems and micro-hydro. In this context some of the water use activities such as mill or *Ghatta* operation will suffer after the water transfer, if water availability is low during the lean season. The minimum flow is recognized as necessary for environment. The people in the basin did not have any say in the bulk transfer of water because, the ownership of the water resources according to the Water Resources Act (1992) lies with the government. But the local user will have to handle the likely impact on the existing water right. In the future, the communities have to face competition in resource management across the sectors and across the communities (upstream-downstream). Multiple communities must coordinate their actions to derive optimal benefit from the resource. The recognition of the local water right would have facilitated the involvement of local users in the negotiation process of the bulk transfer. However, this was missing in the design of the project. The existing institutional arrangement may not be sufficient to deal with the likely negative effect that may occur in the future. The evolvement of institutions will have to be facilitated.

In this context, the lack of basin management institutions seems to be constraining in addressing the needs of various water users. The District Water Resources Committee (DWRC) however is not effective and it does not seem to contribute to that respect. From the Melamchi water transfer experience it could be learnt that the requirement of more formal institutions with representation from various stakeholders (not only users) is necessary for beneficial and sustainable use of resources at the catchment level. Institutions building are a process that needs to be built from within to address complex situations emerging from the competition among users and sectors in the catchment. Of the recent policy developments, Water Resources Strategy (2002) has identified the need of a committee to integrate and co-ordinate all the uses of natural resources within the catchment and has laid emphasis on the formation of River Basin Committee (RBC) at River basin. The RBC is expected to formulate policies, coordinate, and supervise natural resources use and management within the river basin. The MWSP experience could provide a basis in designing appropriate mechanism in that respect.

The users from Kathmandu are the most neglected stakeholders as no consultation have been initiated with them. Their decision is important because they are the one who have to pay for the water services. Their capability and willingness to pay will determine the sustainability of the project. The water pricing for the consumer in Kathmandu after the Melamchi is not done yet which is also related to the compensation demand of the local. In the absence of policy for a bulk water-transfer project in Nepal, the pricing and also the compensation package for the donor communities is difficult to make. This could be attributed to the delay in the implementation of the institutional reform activities proposed under the project.

Finally, it could be said that the involvement of the users at local level through their institutions in the beginning of the project would have been an opportunity for the project to facilitate the institutions building that could cope with the expected changes from the water transfer.

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