

Law, Rights and Equity: Implications of State Intervention in Farmer Managed Irrigation Systems'

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INTRODUCTION

Over the past two decades the state has intervened heavily, directly or indirectly, in farmer managed irrigation systems (FMIS) to increase agriculture production by expanding irrigated agriculture'. Along with these interventions many studies have been conducted and workshops held to seek ways to reduce the cost of rehabilitation, expansion and maintenance of FMIS. For example, since 1986, IIMN Nepal, which has worked closely with the Water and Energy Commission Secretariat (WECS) and the Department of Irrigation, has published at least four books based on workshops or seminars on public interventions in FMIS⁴. These studies have shown that farmer participation in rehabilitation and improved water management capabilities of the water users are two ways of achieving these objectives.

In many ways research on the consequences of interventions do not seem to have progressed much, at least concerning water rights issues, since the first conference on public intervention in farmer managed irrigation systems held in 1986 in Kathmandu'. Coward and Levine (1987) suggested in their keynote paper in that conference that the issue of water rights was very important in public intervention. They argued that state intervention often leads to "eroding or eradicating the legitimate rights of existing water users" (ibid.: 19) but secure water rights are important for incentives to individuals and groups to develop and maintain their systems. They suggest that the State can play an important role in allocating and enforcing water rights. In the Nepalese context, Coward and Levine mentioned Martin's (1986) and U. Pradhan's (1984) studies. Martin showed that secure water rights are important for successful operation and continuity of FMIS and U. Pradhan demonstrated (1984) that one of the (unintended) consequences of state intervention

in FMIS is to “disrupt the security of water rights held by traditional users” (Coward and Levine 1987:19). Some of the participants of the conference were also concerned with water rights issues, especially of local water rights. One of the questions raised during the discussion in that workshop was, “As government authority penetrates more into rural areas, what happens when local customary water rights conflict with national laws?” (Martin and Yoder 1987:vi).

The issues raised in the conference have not been pursued seriously in Nepal, even by IIMI. In the workshops, seminars and publications which followed, most of the papers discussed either implications of state interventions for the cost of system rehabilitation, increase in command area and agriculture production and productivity, or management **issues** such as farmer participation, strengthening local farmers capability to maintain and operate their systems⁶. Issues concerning law, water rights and equity were rarely addressed’.

It is of course perfectly reasonable to have other concerns than water rights. However, the neglect of this issue in intervention and research may lead, among other things, to disinclination by the existing irrigators to continue developing and maintaining their irrigation systems, to the targeted beneficiaries of system expansion projects not having access to irrigation, or to conflicts between farmers of the same or different irrigation systems. As the studies in this volume show, in some cases, the enlarged irrigation system benefits new users at the cost of existing users who had invested in creating and maintaining the system. In other cases, the targeted beneficiaries receive less water than proposed or do not receive any water at all. Further, the construction of a permanent headwork to replace the temporary brushwood structure of one system benefits the users of that system but reduces water supply to downstream irrigation systems. **All** these raise questions concerning rights, law and equity.

In this paper we discuss how state interventions in FMIS affect existing water rights relationships between stakeholders (old as well as new rights holders and non-rights holders) and how such interventions, often legitimized by state law, frequently question local law as well as notions of rights and equity based on or justified by such law⁸. Three case studies of state interventions to rehabilitate and enlarge existing **FMIS** will be discussed. It will be argued that state intervention often provide opportunities for some stakeholders to contest and possibly change property relations and rights (as well as obligations), and the basis of these relations and rights, by negotiation, disputing, or resorting to administrative and political connections. Social relations, especially power relations, the resources they are able to employ, the type of involvement of the state (or donor agencies), organizational skills and location of land in the command area all determine how property relations and water rights are restructured. Law, whether state or local, is but one of the resources used to legitimize their claims (cf. R. Pradhan and U. Pradhan 1996). The paper will also raise the question of how equity is to be defined and who is to define what is equitable.

STATE INTERVENTION AND DISPUTES IN FARMER MANAGED IRRIGATION SYSTEMS

We will now present case studies of disputes between farmers over water rights issues in several farmer managed irrigation systems which were initially constructed by the users of the canals and

later rehabilitated and enlarged with grants from the state. All of these are small, hill irrigation systems, **service** command areas ranging from 16.5 ha to 51.9 ha and benefit between 64 to 110 households. The volume of water in these streams, fed by springs, increases during monsoon and decreases considerably during the pre-monsoon months.

The cropping pattern in all these systems are similar, and vary according to season and type of land. During monsoon, rice is grown in *khet* (low land, irrigated rice fields) and maize (one in one case millet) in *bari/pakho* fields (upland fields): this is followed by wheat (and in one case mustard) in *khet* and mustard in *bari* fields; finally during the dry, pre-monsoon season, early rice or maize are cultivated in *khet* and *bari* fields are either left fallow or maize or *ghaiya* dhan (a paddy crop which is broadcast and not transplanted and which does not require irrigation) are cultivated.

In all these systems more land could be irrigated and bari land converted to khet if the existing rights holders agreed to allocate water to these fields or practiced a different system of water distribution. The existing rights holders, however, were (and are) extremely reluctant to enlarge the area of irrigated fields (*whether khet or bari*), except when they themselves benefit and because they are usually local elites, they are able to effectively control water use. The farmers who did not have access or rights to water waited for the right opportunity to stake claims to rights or somehow acquire water. The intervention by the state, directly or indirectly, as well as active leadership provided by a few local leaders initiated the process of staking claims to water rights from sources (irrigation system or stream) they were previously denied.

The three case studies describe the consequences of state intervention for existing irrigators and newcomers within irrigation systems: in one case (Aarubote Kulo), the targeted beneficiaries did not receive irrigation water while another case (Jaisi Kulo), state intervention helped the targeted beneficiaries actualise their water rights. These case studies complement the case study of Satrasaya Phant described elsewhere in this volume (Durga K.C. and R. Pradhan) The third case study describes the consequences of intervention for irrigators of other irrigation systems tapping water from the same source (Tallo Chapleti). State intervention and active leadership helped one system acquire water at the cost of another system. This case study complements the case study of Telia Kulo, described elsewhere in this volume (M. Pradhan and R. Pradhan), where intervention by the state helped downstream canal farmers protect their water rights.

These case studies also illustrate the importance social relations, especially power relations, between stakeholders in acquiring, rearranging and protecting water rights.

Aarubote Kulo in Sindhupalchowk

Aarubote Kulo is located in Sikharpur VDC of Sindhupalchowk District and is the most downstream of the three irrigation systems which tap water from Sahara Khola, a spring fed stream. The canal was first constructed in 1977 by three farmers using their own resources. A few years later other farmers, including Majhis (fishermen/ ferry men), contributed labour to extend the canal. The canal irrigated about 1.7 ha of *khet* during monsoon and benefited 12 households.

The irrigation system was rehabilitated and enlarged between 1986 and 1987 with grants by the SINKALAMA project totalling Rs. 500,000. The beneficiary households contributed a total

of Rs. 200,000 worth of labour and Rs. **25,642** cash as security deposit, two conditions laid down by the project. The canal is now **3 km** long, irrigates **9.33** ha of khet during monsoon and **16.55** ha of khet and bari during winter, and benefits (or was targetted to benefit) 74 households.

One of the main objectives of the extension project was to provide irrigation facilities to the fields in Aarubote gaon (also known as Majhi gaon), a hamlet settled by Majhis (low caste fishermen/ferrymen), at the **tail** end of the present day command area. The 28 Majhi households of Aarubote gaon also contributed labour and cash for the canal rehabilitation and enlargement project and the canal was extended **upto** their hamlet. However, as in many canal extension projects, the main beneficiaries are head and middle sector fanners. Many of them were able to take advantage of the improved water supply to convert their *bari* (upland fields) to *kher*. Many Majhis too converted their *bari* to *khet* with the expectation that they would receive irrigation for the monsoon rice crop. However, five Majhis households have reconverted and other households are planning to reconvert their new khet to bari because they have not been able to acquire water for their monsoon rice crop. Though they are able to acquire water for the winter crops they do not receive sufficient water even for crops such as maize which require less water than rice because the upcanal farmers use up all the water or frequently divert water to their fields out of turn. Or they receive water only after fanners at the headreach have finished irrigating their fields but by then **the** seeding time is almost over.

~~The tail end farmers could have irrigated their fields~~ had there been an effective water management organization and officials such as water monitors and had the farmers who diverted water out of turn been penalized (cf. Durga **K.C.** and Pradhan, this volume). But the users of Aarubote Kulo do not have such an organization or official and the upcanal farmers are not penalized for diverting water out of turn. The upcanal fanners, or rather the leading families, are not keen to form a water users' association or have a formal canal management committee and water guards, all of which exist in Majh Kulo, a few hundred meters above Aarubote Kulo, because they benefit from a lack of such organization. All the decisions regarding water management activities are taken by a few leading families.

The upcanal fanners claim that they allocate water to the tail end sector and that had they really wanted, they could irrigate their fields but they (the Majhis) are not interested in irrigation or agriculture. They further claim that the Majhis are lazy or scared to convey their fields to khet because of the danger of landslides and that they are more interested in fishing which they find more lucrative than fanning. The Majhis claim that they are keen to cultivate their fields and grow rice but even if they are allocated water, they are unable to acquire water for monsoon irrigation.

Two local rules make it possible, at least theoretically, for the tail end farmers to irrigate their fields. First, the Majhis are allowed to irrigate their fields at night. Second, whoever reaches the intake first has priority in delivering water to his field. However, it is usually the case that the upcanal fanners are present at the intake as early as 2 a.m. so that in effect the Majhis hardly ever get the opportunity to irrigate their fields. And even if they manage to get their first, the upcanal fanners divert water to their fields out of turn.

In **1993**, as in other years, the Majhis were unable to irrigate their monsoon maize crop but that year, unlike earlier, they organized themselves and threatened the upcanal fanners with *khukuris*

(Nepalese knife). This threat persuaded the upcanal fanners to allot water to the Majhis for two days during the monsoon season. However, the following year the upcanal fanners again deprived the Majhis of their water rights. The Majhis retaliated by not contributing labour for maintenance of the system, which they had done regularly earlier. The next year, as a result of further threat and negotiation, the Majhis were allowed to irrigate their winter crops in time and undisturbed but they are yet to acquire water to irrigate their monsoon rice crops.

State intervention changed existing property relations and structure of rights. The upcanal farmers, the old rights holders in the canal, accept, at least in principle, that the tail end fanners have rights to water from the canal. The Majhis have rights to water from the canal because they contributed labour for its rehabilitation and extension and also because the project was sanctioned, and grants given, primarily to irrigate their fields. The upcanal fanners, however, grant them junior rights, reserving for themselves senior rights to water from the canal. Their claim to senior rights is supported by two rules, both of which are in accordance with state (National Code) as well as local law. First, as the original investors in the canal (by contributing labour for construction and maintenance), they have senior rights. As in many communities, in this locality too, newcomers have junior rights to the existing rights holders. Second, upcanal fanners have priority over downcanal farmers in water acquisition.

The question is how much water can the upcanal fanners, the old rights holders, use? The National Code states that the prior appropriators (the old investors) and the upcanal irrigators can use as much water as they require to irrigate their fields and that existing irrigated fields, wherever they are located, should not be deprived of irrigation. Local rule also assigns priority in water distribution to existing rights holders and upcanal fields. This may mean that the newcomers, particularly if their fields are located at the tail end of the command area, may receive very little or no irrigation water, as long as the upcanal fanners do not waste water.

However, and this is an important point, local rules, in this case, water distribution rules, are subject to negotiation between the rights holders. And the outcome of the negotiation (agreement or lack of agreement, disputes, etc.) is influenced a great deal by social relations, especially power relations, between the stakeholders. In this case, the tailenders, because of their location and weak social position, were at first unable to irrigate their fields even though they had rights to water from the canal. Later, they were able to irrigate their fields for limited time and that too only for some crops (not the important rice crop) only because they threatened physical violence and refused to contribute labour to repair the system.

Jaisi Kulo and Baraha Kulo in Tanahu

The village known as Yampa Phant lies on a hill slope. The upper part of the village is called Jaisi Phant and the lower section Baraha Phant. Jaisi Phant is irrigated by Jaisi Kulo and Baraha Phant by Baraha Kulo. It is not known for certain when these irrigation systems were constructed and which system is older but both systems tap water from Sano Andhi Khola, a tributary of Andhi Khola. The intake points of Baraha and Jaisi canals were located less than 100 meters apart so that increased water supply to one canal was reduced if the other took more than the share agreed upon. The fanners of these two irrigation systems had negotiated and renegotiated water allocation from the stream and finally agreed to share water equally even though Baraha Kulo irrigates eight times

more land than Jaisi Kulo. One of the main reasons for the equal allotment of water is that the fanners of Jaisi Kulo had an advantage over the fanners of Baraha Kulo because their canal is upstream to the latter canal. (See Map I). According to local law, upstream systems, especially if they are constructed earlier than downstream ones, can divert as much water as they want. The users of Baraha Kulo were not really satisfied with this agreement and continued to demand more share of water. The disputes between the users of the two systems **are** still continuing.

In 1988 and 1989 the Yampalis received two grants of Rs. **8,85,576.00** and **Rs. 6,00,000** respectively from the Hill Food Irrigation Development Project (HFDIP) to rehabilitate and combine the two irrigation systems. The two systems were to have a single diversion structure in **Andhi Kholra** and water was to be diverted to Baraha Kulo from a gate regulator in Jaisi Kulo. The tail end of Jaisi Kulo was to be enlarged to irrigate pakho land. The fanners had **to** contribute **25%** of the **total** cost, **20%** as labour and **5%** cash as security deposit.

Before the implementation of this project, the total cultivated area in Jaisi Phant was **22.15** ha of which only 1.60 ha was irrigated **by** Jaisi Kulo. In Baraha Phant, of the total cultivated area was **14.35** ha, 11.85 ha **was** irrigated by Baraha Kulo. Baraha Phant had **2.5** ha of pakho (unirrigated fields) and Jaisi Phant had **20.55** ha of unirrigated fields. At present, after the rehabilitation and extension as well **as** fusion of the two irrigation systems, Jaisi and Baraha Kulo service about **37** ha of fields and benefit **65** households. All the cultivated fields, including the formerly pakho fields, are irrigated.

Whatever may have been the plan proposed to the HFDIP office in order to get the budget **sanctioned, the farmers did not mean to implement the project according to the plan. Once the plan** was approved and budget sanctioned the Yampalis began to dispute between themselves about which canal should be improved and enlarged and the share of water they were to be allocated. There were **three** parties to this dispute: a) existing irrigators of Baraha Kulo, b) existing irrigators of Jaisi Kulo and c) potential irrigators who owned pakho land in the tail end of the Jaisi Kulo command area. They disputed before, during and after the project **was** implemented. While the farmers of the existing irrigated fields justified their claims by reference to local law, the owners of pakho land and officials of the state agencies gave other reasons to support the claims of the pakho land owners. After protracted negotiation, mediated by government officials, they were able to reach a compromise which secured water rights for the pakho fanners of Jaisi Kulo while at the same time protected the prior rights of the existing rights holders.

Dispute before Implementation of the Project

The fanners of Jaisi Kulo demanded that most of the canal improvement work should be **carried** out in their canal and that they be allocated a larger share of water than Baraha Kulo. They argued that Jaisi Kulo can service both khet and pakho land. Pakho land could be converted to khet after the canal was improved and extended. Further, Jaisi Kulo could easily irrigate fields in Baraha Phant, located directly below the command area of Jaisi Kulo. The fanners of Baraha Kulo argued that they should be allotted more water **than** Jaisi Kulo because they have a larger command area. They demanded that water should be allocated according to size of the command area. Moreover, traditionally irrigated *khets* (*sabik khet*) have higher priority for irrigation than *pakho* land. The owners of pakho land in Jaisi Phant demanded water from Jaisi Kulo to irrigate their monsoon rice

crop (i.e., after they had converted their pakho fields to khet). They argued that they have rights to water from the (improved) canal because had their fields not been included in the project plan (to increase the command area) the project would not have been sanctioned.

The three disputing parties could not come to an agreement and the owners of pakho land filed complaints with the Chief District Office, the Agriculture Development Office, the District Panchayat Office and the HFIP office. Officials from these offices visited Yampa Phant and, after surveying the area, suggested that irrigation should be provided to the pakho fields. The District Panchayat (now called District Development Committee) instructed the Village Panchayat (now called Village Development Committee) by letter to ensure that the pakho land received irrigation and that at the same time the traditionally irrigated fields did not receive less water than they had been receiving. The rhetoric used here is not that of rights but appeal to the broad national policy of increasing irrigated land. Part of the letter reads, " His Majesty's Government has a policy of providing irrigation facilities to pakho land to grow irrigated crops and increase national income." The Pradhan Pancha (chairman of the village council) was given the task of mediating in this dispute.

In a meeting attended by 56 farmers of Yampa Phant and the Pradhan Pancha, Ward member and a member of Peasant Organisation, the following following resolutions were passed:

1. *Cash and labour to be contributed by the farmers for the improvement of both Jaisi and Baraha Kulos would be made on the basis of the size of land which was registered as khet (sabik khet) in 1933 and later.*
2. *Water is to be distributed from the same location in the river as has been done traditionally.*
3. *Regarding water allocation, water discharge should be measured at the place of distribution. Since the Baraha kulo has larger service area, 3 parts of water would be allocated to Baraha Kulo and 2 parts to the Jaisi Kulo from the intake point at the river.*
4. *Equal priority is given for the improvement of both Jaisi and Baraha Kulos to prevent water loss through kakes from the canal.*
5. *Required irrigation is to be provided to the existing pakho land (sabik pakho) for growing winter crops such as wheat, mustard, and vegetables. The main objective is to provide irrigation to the pakho land to increase crop yields by utilizing minimum water.*
6. *Irrigation will be provided from 1st Aswin to 15th Chaitra (15th October to 30th April, i.e. winter season) to grow winter crops in the Pakho land (sabik pakho).*
7. *Irrigation will be provided from Jaisi Kulo for the establishment of vegetable nursery and transplantation of vegetables in the pakho land but if more irrigation is needed, water will be provided from both Jaisi Kulo and Baraha Kulo.*
8. *When pakho land receives irrigation from Baraha Kulo, the khet fields of Jaisi Kulo should not be irrigated from this water.*
9. *Irrigation will be provided to the pakho land for the required time from a suitable place in the canal.*

10. *Regarding cash contribution from the farmers as deposit for the HFIP project, cash should be collected at the rate of Rs. 20 per ropani (0.05ha) from pakho land since irrigation is essential for growing winter crops there and Rs 90 per ropani from Khet fields.*
11. *Distribution of water at the field level is to be done by the Thekedar (water monitor) on the basis of Bhijuwa Palo (water distribution from the head to the tail, each field getting as much water as is required) as per the allocated share of water (between different sectors).*

One copy each of the above agreement was distributed to the concerned Village Panchayat office, Jaisi Kulo and Baraha Kulo farmers.

The terms of the agreement accorded priority to the existing rights holders and at the same time recognized the (junior) rights of the newcomers, who would be allocated water only for winter crops. The agreement favoured the users of Baraha Kulo: not only were equal priority accorded to both the canal for improvement work, Baraha Kulo would receive more water than Jaisi Kulo, which had to be shared with the new irrigators. The pakho land farmers were given rights to water from the irrigation system due to the intervention of government officials. And Baraha Kulo farmers were able to extract favourable terms because the Pradhan Pancha of the Village Panchayat owned land in Baraha Kulo command area and was able to manoeuvre the terms in their favour. The users of Jaisi Kulo were not too happy with the terms of the agreement, as can be seen from the disputes which occurred later. They agreed to the terms only to begin the rehabilitation work.

Disputes during Implementation of the Project

The decisions taken in the meeting temporarily resolved disputes between the different stakeholders of these irrigation systems. When the construction work was nearly completed, there was another dispute between the owners of existing khet land and the newly pakho land (who had converted their land to khet) over water distribution. The pakho khet farmers again appealed to the officials to secure water for their fields. Another meeting was held between the farmers of Yampa Phant, the CDO, officials from the Regional Director of Agriculture Development, the Coordinator of the Hill Food Irrigation Project, the Pradhan Pancha and ward members. The following resolutions were passed in the meeting:

The improvement work of the project is almost complete and now there is dispute between (the owners of) pakho land and khet land over using water from the canal. Do not dispute about using water from the canal. The water available in the canal can irrigate maximum land area and increase crop yields and the national income. All of us should think about the development of the country. Irrigation water will be provided to pakho land without affecting water supply to the existing khet fields.

The District Panchayat has authorized the Village Panchayat to form a Water Users' Committee (WUC). This committee will be formed by the beneficiary farmers with the help of the concerned Agriculture Development Officer and technicians from the project. The main objective of the WUC is to manage irrigation properly for the pakho land. The pakho land is to be gradually converted into khet to increase crop production.

As per the decision of the meeting a eleven member Water Users' Committee was formed under the chairmanship of Mr. Ram Kumar Shrestha, Pradhan Pancha and chairman of the construction committee.

The resolutions passed in the meeting, as in the earlier decisions, legitimised the claims of the newcomers (pakho land owners) to water without specifying their share of water from the system. Again, the rights of the existing irrigators were protected (to the extent of their traditional share of water) while insisting that the new irrigators should be allocated water from the improved system. The basis for allocating water was that there was sufficient water and that the national goal was to increase irrigated agriculture.

Disputes after Completion of the Project

After the construction work was completed, the construction committee was dissolved in a meeting held in 1989. The meeting was attended by the Acting Agriculture Development Officer, Manager of Agriculture Development Bank (ADB/Nepal), the overseer of HFIP, four ward members of Bandipur Village Panchayat and 42 farmers. The following decisions were made in this meeting:

The improvement works in Jaisi Kulo and Baraha Kulo have been completed under the assistance of the Hill Food Irrigation Project. Water is to be delivered to Baraha Kulo from the main canal of Jaisi Kulo 918 meters downstream from its intake.

Water is to be distributed on rotational basis, 12 hours each for Baraha Kulo and Jaisi Kulo; out of 12 hours for Jaisi Kulo, 8 hours for existing khet land (sabik Khet) of Jaisi Kulo and 4 hours for pakho land to irrigate rice crops.

The decision taken in this meeting not only legitimised the claims of the pakho land owners to water rights in the system, it also allocated water to them from the share allocated to Jaisi Kulo. The pakho sector was allocated 4 hours of water (one-sixth). The pakho land owners were able to establish their rights so securely that later when the farmers of Jaisi and Baraha canals disputed over water allocation, the pakho sector was still assigned 4 hours of water.

The Jaisi Kulo farmers, however, were not happy with the share of water allotted to them and they later demanded more water. In 1993 after protracted negotiation, equal shares of water (10 hours each every day) were allocated to the traditionally irrigated fields in Jaisi Kulo and Baraha Kulo and four hours to the pakho fields. The next year, the users of Baraha Kulo demanded that they be allotted 12 hours of water per day, as agreed upon during the meeting, arguing that before the unification of the two canals they had received equal share of water and, moreover, 10 hours of water was not sufficient for them because they had more land to irrigate than Jaisi Kulo. The Jaisi Kulo users were not willing to share water equally so the users of Baraha Kulo were unable to receive more water than allocated to them. And it was not possible for the users of Baraha Kulo to forcefully acquire more water because water was conveyed to Baraha Kulo from Jaisi Kulo, and the users of Jaisi Kulo could always control how much water flowed to Baraha Kulo.

In all these disputes, the three parties raise the issue of equity although the rhetoric is not phrased in equity terms. The farmers of Baraha Kulo demanded more share of water claiming that they had more rice fields and moreover according to traditional (customary) law, old rice fields have priority over new rice fields in water allocation. In other words, they argued for more water on the grounds of land size and of customary law. The Jaisi farmers were not willing to allocate more water because they were upstream and reserved the right to deliver as much water as they wanted. The pakho land owners demanded rights to share of water on the ground their land was included as part of the command area in the project plan. They could no longer be excluded from sharing water because the HFIP project was funded by the government. To put it differently, they argued in effect that with the intervention of the government by means of grants (and the fact that they too had contributed cash and labour for the rehabilitation and enlargement of the system), property relations and rights, and thus water rights, had changed. They too had rights to be included in the property relations and to acquire water from the system.

The government officials who mediated in these disputes had to draw a fine line between upholding customary law and rights and insisting on new rights. We are not sure whether they were concerned with the question of equity. They did not argue that since this was a government funded project, the government had a right to decide on who had legitimate rights to water, rather they pointed out that with the improvement of the canal, there was sufficient water for all the fields, including the pakho fields. And they appealed to nationalistic feelings: to increase food production and thereby national income by irrigating more land. They also stressed the fact that it was government policy to bring more fields under irrigation. At the same time, they recommended that the share of water allocated to the previously irrigated fields not be reduced; in other words, they upheld the state and local law of the senior rights of prior appropriators.

Strong intervention by the state in this case helped the tail end farmers (pakho land owners) of Jaisi Kulo gain legitimate rights and actual access to water which they otherwise may have been denied.

Tallo Chapleti Kulo and Other Irrigation Systems

Sikharpur and Bandigaon are neighbouring VDCs in Sindhupalchowk District. Bagmara Khola, which separates these two VDCs, is a spring fed tributary of the Irrawati river and the source of water for many irrigation systems in these two VDCs. The irrigation systems in the Sikharpur side of Bagmara service fields in the hamlet known as Bangaon whereas the systems on the other side of the river service fields in Dundegaon. (See Map II and Table I).

By most accounts the three canals servicing fields in Dundegaon are older than the canals in Bangaon, except for the uppermost canal (Mathillo Chapleti Kulo). The other canals in the Bangaon side of Bagmara were constructed by the farmers over the past 30 years. The discharge of water in Bagmara is not sufficient to irrigate all the fields in Dundegaon, especially at the tail end of the three command areas. Constructing new irrigating systems which tapped water from Bagmara would considerably decrease water supply to the older canals. It is only natural to expect that there would be conflicts between these two villages, especially since the intakes of the new systems are located very close to the intakes of the older canals.

The most active villagers in initiating the construction of these new canals in Bangaon were Dhan Bahadur Rijal and his relatives who owned large tracts of cultivated but un~~irrigated~~ irrigated fields. In the early 1960s, Dhan Bahadur retired from the Indian Army, returned to his village and involved himself in local politics. He built connections with local administrators and national level politicians. Using his connections, influence and organising skills he initiated work, first in extending Thakuri Kulo and then on the construction of two new canals. **As** he himself admitted he was one of the main beneficiaries of these irrigation systems.

The Dundegaon villagers who opposed the constructions of these canals were led by the Katwals, high caste Hindus, who owned land in the head and middle sectors of the command areas of all three canals in Dundegaon. They were not as well connected or active as Dhan Bahadur and were not very effective in preventing Dhan Bahadur from constructing new canals which decreased water supply to their canals.

TABLE I: IRRIGATION SYSTEMS WHICH ACQUIRE WATER FROM BAGMARA KHOLA

Name of the canal	Location	Date Constructed/extended/improved
Mathillo Chapleti	Chapleti, Sikharpur	Registered in 1895 A.D. ; >100 years
Thakuri* (Mijar)	Chapleti, Sikharpur	Registered in 1895 ; extension in 1968
Ange'	Dunde, Bandieaon	>100 years
Ghattara Bari*	Chapleti, Sikharpur	Completed in 1974
Muhane'	Dunde, Bandieaon	> 100 years
Gairi	Dunde, Bandieaon	> 100 years
Tallo @ Chapleti	Bangaon, Sikharpur	Completed in 1980 rehabilitated in 1988 with IIMI/WECS grant
Tallo Gain Kulo	Dunde, Bandigaon	1994
Thado Sim* Puchar Kulo	Bangaon, Sikharpur	1994

Note: * denotes the system taps water from spring(s) too:

@ denotes the ~~system~~ system taps water from Rakshya Khola (a seasonal stream)

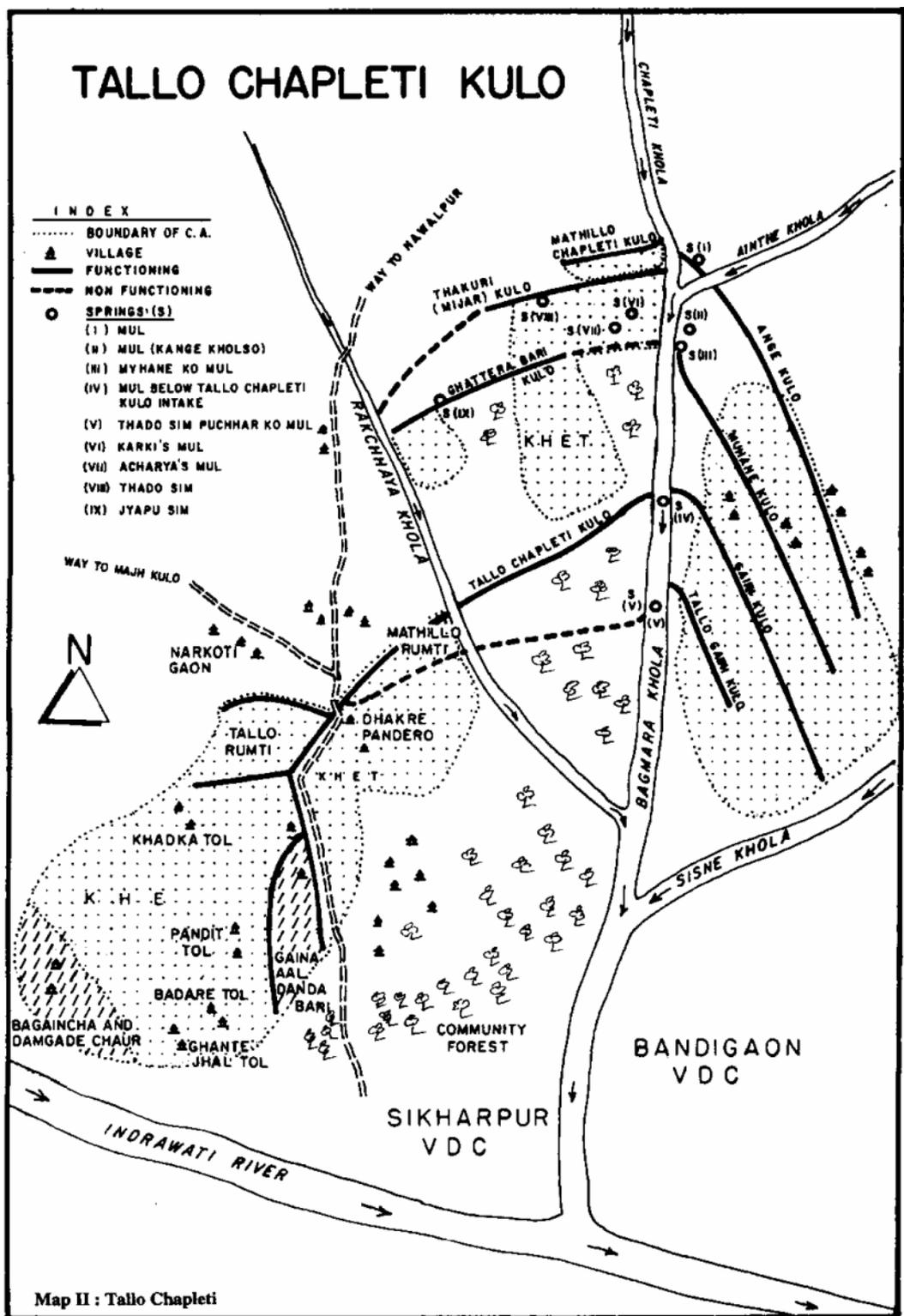
Tallo Chapleti benefits 110 households and irrigates **26.25 ha khet** and 25.70 ha of **bari** land.

Ange, Muhane and **Gairi** canals benefit **64** households and irrigate **15 ha** of **khet** and 10 ha of **bari**.

TALLO CHAPLETI KULO

INDEX

- BOUNDARY OF C.A.
- ▲ VILLAGE
- FUNCTIONING
- - - - - NON FUNCTIONING
- SPRINGS (S)
- (I) MUL
- (II) MUL (KANGE KHOLSO)
- (III) MYHANE KO MUL
- (IV) MUL BELOW TALLO CHAPLETI KULO INTAKE
- (V) THADO SIM PUCHHAR KO MUL
- (VI) KARKI'S MUL
- (VII) ACHARYA'S MUL
- (VIII) THADO SIM
- (IX) JYAPU SIM



Map II : Tallo Chapleti

DRAWN BY: R.L. SHRSTHA

The disputes between Bangaon and Dundegaon residents over sharing of water for irrigation from Bagmara go back at least 30 years. There have been a series of conflicts and disputes on different sites and in different arenas (forums) concerning different intake points and canals. The state has intervened several times in these systems, mostly to mediate conflicts over water rights, to support one of the disputing parties or rehabilitate and extend the systems. Intervention by the state and donor agencies, including IIMI/WECS helped the farmers of Bangaon claim and acquire rights to tap water from Bagmara. The farmers from Dundegaon were forced to accept, de facto, as it were, their claims even at the cost of reduction of water supply to their system.

These conflicts are interesting from the perspective of our study for they are concerned directly with water rights (who has rights to water and the basis for these rights), mechanisms for conflict resolution, the process of negotiation between disputing parties to arrive at a settlement, the consequences of state interventions, and equity issues.

Moves and Countermoves

The Dispute over the Extension of Thakuri Kulo

Our story begins in 1968 when Bangaon farmers, under the leadership of Dhan Bahadur Rijal, extend Thakuri **Kulo**, located below Mathillo Chapleti and above Ange Kulo, to irrigate fields in Bangaon. They did not inform, much less consult Dundegaon farmers about their plans. The Dundegaon farmers, worried that the supply of water to Ange Kulo would be drastically reduced, destroyed the extended portion of Thakuri **Kulo**. They were willing to allow the existing irrigated land to be irrigated but not new areas. Dhan Bahadur then approached the Chief District Officer (CDO) for help and the CDO ordered the police to protect them while they constructed the canal. They were able to complete construction of the canal under police protection. They were able to operate the full length of the canal only for a few years then they could operate only the head reach of the canal because of insufficient water supply, frequent landslides in the tail end and recurrent conflicts with the Dundegaon farmers.

The Dispute over the Construction of Ghattera Bari Kulo

A few years later, Bangaon farmers, again under the leadership of Dhan Bahadur, built Ghattera Bari Kulo (also known as Tallo Chapleti Majh **Kulo**) downstream of **Thakuri Kulo**. The intake point of this canal is located 15 meters above that of Muhane Kulo and just below two springs. They hoped to tap water from Bagmara as well as the springs which were already tapped by Muhane **Kulo**. Dhan Bahadur would be one of the main beneficiaries of the canal.

The Dundegaon farmers, having learnt from their earlier mistake, did not destroy this canal but instead filed a petition with the district Land Revenue Office requesting the office to restrain Bangaon farmers from irrigating the new command area. The Land Revenue Office took two years to decide the case, or rather to suggest to the petitioners that they file a case in the court because the Office did not have the authority to hear the case. Strangely, although the Dundegaon farmers did not file a case in the court, both parties agree that the Land Revenue Office decided in favour of the Dundegaon farmers. The decision was interpreted to mean that the Bangaon farmers were

acting illegally by constructing the canal. They were in fact violating both local and state laws by constructing and operating the canal which affected water supply to existing irrigation systems. After operating the full length of the canal for about six years, they gave up using the head and middle sectors of the canal, as in the Thakuri Kulo case, due to frequent landslides and conflicts with Dundegaon farmers. The tail end could be operated because it taps water from a spring, known as Jyapu Sim.

The Disputes over Telia Kulo

In 1980, Dhan Bahadur again initiated work on another canal, the Tallo Chapleti Kulo, to irrigate fields in Bangaon. This canal was constructed as part of the Food for Work Program, for which the farmers received 17 quintals of wheat which was sold to pay local contractors. The Dundegaon farmers did not object to the construction of this canal for several reasons. First, Dhan Bahadur had by then developed good social and political relations with the elites of Dundegaon and was able to negotiate with them about the construction of the canal. Second, the intake of this canal was to be located below that of **Gairi Kulo**, the most downstream of the three canals serving Dundegaon. Third, **Gairi Kulo** had not been functioning for the past two years (and did not function for further three years). Fourth, the Dundegaon farmers did not believe that Tallo Chapleti Kulo would operate successfully due to geographical reasons (difficult terrain, frequent landslides, etc.). And in fact, the canal did not function well until it was rehabilitated in 1987.

Tallo Chapleti Kulo was selected as one of the irrigation systems to be rehabilitated and extended as part of the IIMI\ WECS action research project. The canal was actually selected by an engineering consulting firm which had carried out a Rapid Rural Appraisal survey of numerous systems. The rehabilitation and extension work included construction of a gabion diversion structure (to tap more water), widening the canal at places, construction of culverts, laying hume pipes and increasing the length of the canal. The irrigation system was capable of conveying more water and of irrigating a larger command area than before the project. However, the discharge of water at the point where the diversion structure was constructed was not sufficient to meet the water demand in the command area. The only way the Bangaon farmers could convey more water in Tallo Chapleti was by blocking off the intake point of **Gairi Kulo** to divert water to their system.

The Dundegaon farmers were not informed, much less consulted, about the plans to rehabilitate and extend Tallo Chapleti. They later came to know that the project was to be implemented but they had not expected the gabion diversion structure to be constructed only a few feet below the intake of **Gairi Kulo**. The Dundegaon farmers rightly feared that the Bangaon farmers would divert water from **Bagmara** to Tallo Chapleti at their cost because it was easy to block off the intake of **Gairi Kulo**. They also feared that the Bangaon farmers would claim equal rights to tap water from this source and that their claim would be supported by state agencies and officials (CDO, police, Department of Irrigation, etc.)

This incident occurred during the Panchayat regime. It was a period, as an informant from another site remarked, "when you could be arrested as anti-national (and anti-development) if you criticised any 'development' work, even if it went against your interest". The Dundegaon farmers were afraid to complain to the authorities about the construction, especially since it was a government supported project. Moreover, Bangaon was (and still is) part of a powerful politician's

constituency. This politician was a minister then and Dhan Bahadur was (and still is) his trusted and important supporter. Dundegaon is part of another constituency, which elected a rival of the politician to the parliament (Rastriya Panchayat).

Given the political and administrative powers 'arrayed' against them, the Dundegaon farmers felt that they had no option but to destroy the newly constructed gabion diversion structure. Unfortunately this desperate act to protect their water source backfired because they destroyed 'government property'. (The diversion structure was built with aid money.)⁹ The destruction of government property gave the residents of Bangaon the opportunity they were seeking. They, **as** well **as** the department of irrigation officials Concerned with the construction of the canal, filed separate cases with the CDO claiming that a part of the canal was damaged and further that they were stoned by the Dundegaon farmers. They thus cleverly converted a dispute over water rights to a law and order problem.

The CDO called representatives of both VDCs to a meeting six months later. He probably had someone investigate the dispute because he rightly understood that the conflict was over water. However, since he was more concerned with law and order problem and **the** completion of the project than water rights issues, he 'suggested' verbally (which was understood to be his ruling) that the two villages share water equally because the stream bordered both villages. He also ordered the chairmen of both villages councils to meet at the police station to discuss this dispute. In accordance with his order, the chairmen and other farmers of both villages met at the police station to negotiate sharing of water from Bagmara.

Dhan Bahadur, representing the Bangaon farmers, negotiated with the elites of Dundegaon with whom he had good relations. They agreed that the intake of Tallo Chapleti would be located below that of Gairi Kulo and use water nottapped by it. They also agreed that water from Bagmara would be fully diverted to Tallo Chapleti after the 25th of Asad (June/July) by which date the command area of Gairi Kulo would have been fully irrigated for the monsoon rice transplantation. Many farmers from Bangaon as well as Dundegaon were unaware of this agreement. A few farmers denied that such an agreement, especially the part about diverting all the water after a certain date, had been made. However, some Dundegaon farmers do recall such an agreement. One of them **said**, " Why waste water? So we let them use water left over, or which seeps or spills over."

The compromise they reached acknowledged the prior and senior rights of Gairi Kulo irrigators to water from Bagmara as well as the (junior) rights of the Tallo Chapleti Kulo irrigators. They shared water from Bagmara **as** per the agreement for a few years but then they began to dispute again about sharing water, especially during periods of water shortage. Dundegaon farmers said that the Bangaon farmers had agreed to use only the left over water but later they began to use the water even before they (the Dundegaon farmers) could irrigate their fields. This is why they tried to prevent the Bangaon farmers from using **the** water all together.

The Bangaon farmers began to demand more water than they had agreed because, unlike the Dundegaon farmers, they were organised and had powerful political and administrative connections. Further, the CDO's administrative ruling (*adesh*), though illegal because he did not have the authority to grant the Tallo Chapleti Kulo irrigators equal rights to water, 'authorised' them to divert half the share of water from Bagmara and claim equal rights. The CDO's ruling was illegal because the older canal would be receiving less water than they traditionally tapped. But he could

threaten to arrest (or even arrest) the Dundegaon farmers named in the petitions for creating a law and order problem and for damaging government property.

So confident were the Bangaon farmers of state support that they later shifted the intake of Tallo Chapleti Kulo directly opposite, or a few feet above, the intake point of Gairi Kulo, thereby claiming equal water rights. The Dundegaon farmers did not accept the claims of the Bangaon farmers to equal water rights but they did not take this dispute to court or other dispute resolution forums or destroy the intake structure. They did not appeal to higher authorities or go to court probably because they did not have the right connections and powerful local leader to encourage them. Further, they were not willing to spend time and money going to court. Court cases are time consuming, expensive and problematic. The villagers believe(d), not without some validity, that political and economic resources are required to ensure decisions in one's favour. And they dared not destroy the intake structure because they had earlier committed a criminal offence by destroying government property.

Currently, though the farmers of Bangaon and Dundegaon still dispute over sharing water from Bagmara, they have come to an unofficial understanding such that both irrigation systems tap water from Bagmara. When there is sufficient water in the river both systems tap water simultaneously and there are no, or very few, conflicts between them. During periods of water shortage, they acquire water following a queue system based on first come, first served rule. This system of water acquisition does not seem to work too well because one or the other party diverts water out of turn or demands half the water and leads to disputes.

How do the disputants justify their claims to water rights from Bagmara? The Bangaon farmers offer three justifications. One of the rhetoric they use is that of equity. They argue that it is not fair that Dundegaon farmers refuse to share water with them because they too have rights to grow and eat rice just like the Dundegaon farmers. **As** Dhan Bahadur *so* well expressed this justification, “They want us to eat only millet (a low status food) while they eat rice. But we say, 'let us both eat rice' “.

Another rhetoric used is that of state support to their claims. Their justification is that the CDO had granted them rights to acquire water from Bagmara. Here the Bangaon farmers seem to be arguing that the state, or rather state officials, have the authority to bestow water rights to them from sources already in use. This justification is not defensible in court because the CDO did not have the authority to grant them such rights but, nevertheless, it can be used, and has been, to acquire water from a disputed source.

The third rhetoric used is that of property. Many Bangaon farmers argue that the Bagmara river is a common property owned jointly and equally by Bangaon and Dundegaon because it lies at the boundary of the two villages therefore they have equal rights to extract water from the stream. In other words, the Bangaon farmers are claiming rights to acquire water from Bagmara on the basis of riparian principle even though local as well as state law is based primarily on the prior appropriation rule. Going strictly according to the prior appropriation rule, latecomers, even if **their land borders a stream, may not tap water from it if this will reduce water supply to pre-existing** irrigation systems. If the riparian principle, as interpreted by the Bangaon farmers, is to be followed, **then villages which adjoins a stream (or a river) have rights to water from the stream, equal**

to the rights of other villages on the opposite bank, whether or not they have already tapped water from this source.

The Dundegaon villagers offer other justifications for claiming virtually exclusive rights to water from Bagmara. Their main argument is that they are **prior** appropriators and, as such, new irrigation systems may not be constructed which will affect water supply to their systems. They further reason that their fields were registered as *khet* (irrigated rice land) at least hundred years ago whereas the fields in Bangaon were registered as *bari*. In accordance with local law, traditionally irrigated fields have priority over unirrigated fields for water distribution. And lastly, to counter the argument that Bagmara is common property of both villages, they argue that they (the Dundegaon fanners) own the stream because the sources of the stream (springs) are located in their village.

As can be seen from the above discussion, the disputants use justifications which best suit their claims and actions. Dundegaon fanners, **as** prior appropriators, have first rights to water from Bagmara so they base their justifications on prevailing customary and statutory laws. Bangaon fanners, **as** newcomers, cannot base their claims to water rights on the prior appropriation rule. They therefore use other rhetoric, such as equity, riparian rights, and **support (sanction) by the state** or state officials for their claims. Though the justifications offered by Dundegaon fanners are in accordance with prevailing law, they are not confident of retaining their almost exclusive rights to water from Bagmara because the Bangaon fanners are **organised**, supported by the state and have been operating Tallo Chapletti for over a decade. Bangaon fanners can later claim that they have rights to acquire water from the disputed location based on the fact that they have been doing so for some time. In other words, they could convert their (illegal) acquisition of water to (legal) rights to do so.

In all the cases of conflicts between Bangaon and Dundegaon fanners described above, the Bangaon fanners attempted to acquire water from a source already used by others, in **most cases** without prior negotiation with existing users and in violation of existing local and state laws. The most important law in this context is that existing users have first priority to water and new users cannot construct systems which will diminish supply of water to existing users. The Bangaon farmers **extended the length of the Thakuri Kulo**, over the objections of Dundegaon farmers whose fields would receive less water as a result of the extension. Similarly, the Bangaon fanners **constructed a new irrigation system above the existing two irrigation systems** in Dundegaon, again clearly in violation of the existing laws because water supply to these two systems would have been reduced. Tallo Chapletti was constructed in accordance with the law because its intake was located below the existing irrigation systems but later, taking advantage of the rehabilitation project, they shifted the intake upstream, on the same level as the intake of Gairi Kulo, again in violation of the existing law. In these cases, the state, either directly or indirectly, and with or without the knowledge of its officials, supported the Bangaon fanners even when they violated the law.

It is clear now that the state helped the Bangaon fanners violate both local and state law of prior appropriation. It could be argued that Clause 3 of the Canal, Electricity and Related Water Resources Act, 1967 had empowered the state to rehabilitate existing systems or construct new ones even at the cost of other existing systems. The users of the existing irrigation systems had to get a licence from the government if any "irrigation project of His Majesty's Government

constructed before **or** after the commencement of this Act, or those proposed to be constructed in the future” would be adversely affected by using the same water resources (even if they are prior appropriators). **As far as** we know, this clause was not cited **by** the Department of Irrigation or others to support the claims of the Bangaon fanners for water rights.

The strategy **of** the Bangaon farmers seemed to have been to see how far they could get away with acquiring water from Bagmara, using their connections to protect them, and then over time to claim rights to tap water. Once they had begun acquiring water from a source, they could claim after a few years that they had traditionally acquired water from this source. **If** this claim was upheld, they would acquire rights to tap water. Tallo Chapleti Kulo irrigators are in the process of acquiring such rights.

The important point to note here is that water rights had been restructured to the disadvantage of the existing rights holders due to state intervention and the clever use of the state by the Bangaon farmers. One consequence of this is regular conflicts between the two villages over water acquisition and distribution especially during peak water demand periods. Another consequence is that the Dundegaon fanners have not invested much in repair and maintenance of their canals due to which the tail end farmers in Dundegaon, mostly small farmers, do not receive sufficient water to irrigate their crops. It should be obvious that ‘robbing’ Ram to help Hari may not always be equitable”.

CONCLUSION

State interventions in fanner managed irrigation systems have had several consequences. Command areas and agriculture production have increased and many newcomers have been able to acquire rights and access to water which they had been denied earlier. However, not all stakeholders benefitted equally. It is usually the dominant groups, the powerful fanners, who benefit most from interventions. The targeted beneficiaries of the interventions (for enlargement **of** the systems) do not always benefit, especially if they are small, poor, unorganized farmers and own land in the tail end of the command area. Sometimes the targeted beneficiaries benefit at the cost **of** existing rights holders, especially if they belong to different irrigation systems.

In all the cases discussed above, state intervention restructured water rights relations between the stakeholders. The existing rights holders were compelled to accept the claims of the ‘newcomers’ to rights to water from their irrigation system or water source. However, though the claims of the newcomers to water rights were accepted, at least in theory, this does not mean that they automatically and actually have access to water. In most cases, the existing rights holders are reluctant to share water with newcomers, even if the systems were enlarged to benefit the non-rights holders. In some cases the newcomers are unable to acquire water to which they have rights (Sattrasaya Phant Kulo, Dumtar fanners) while in other cases, they receive **less** water than believe they have rights to (Aaruhote **Kulo**). In both cases, the state did not intervene to ensure that the proposed share **of** water was delivered to the newcomers, who owned land in the tail end of the command area and are poor, socially weak and unorganized. In another case (Jaisi Kulo) active

state intervention helped the tail end farmers (newcomers) acquire water which they otherwise probably would not have received. In all except the Tallo Chapleti case, the existing rights holders were able to protect their rights and retain priority in water allocation and distribution even if such rights were contested by those who did not have (prior) water rights in the systems. One important conclusion to be drawn from these cases is that state intervention can help newcomers acquire water rights and actual supply of water while at the same time protecting the existing rights (share of water and priority) of the existing rights holders (cf. Durga and R. Pradhan; M. Pradhan and R. Pradhan, this volume).

In the Tallo Chapleti Kulo case, Bangaon farmers did not succeed in their previous efforts to acquire water rights from Bagmara Khola, or did not succeed for long, until WECS/IMI intervened to rehabilitate the system. These farmers used WECS as a weapon to seize "rights" to water in the stream to which they had been denied access, at least for new systems. The state agencies were responsible, directly or indirectly, for helping the users of Tallo Chapleti Kulo acquire water at the cost of existing systems. This case study illustrates the important point that state intervention may adversely affect the existing water rights of the traditional rights holders which may lead, among other things, to the reluctance of the farmers to invest in improving their irrigation systems (Cf. Martin 1986; U. Pradhan 1984).

Rights to water (or other rights) are legitimized or justified by law. However, in legal plural situations such as in Nepal, the stakeholders often contest which law and which particular rule or interpretation of the law is to be accepted as legitimizing or justifying water rights in a specific situation. It is often the case that existing rights holders justify their rights by reference to local law or the Chapter on Land Reclamation in the National Code which accords priority to prior appropriators and upper riparians whereas the newcomers justify their claims by reference to other law or justifications, such as the fact that the system was enlarged to benefit them (the newcomers) or that water should be shared. The government officials usually do not justify their action (for example, insisting that newcomers be given water), by reference to water related laws (see Khadga, this volume), but by reference to other laws or policies, such as law and order problem, national policy of expanding irrigated agriculture and national development. As the cases illustrate, government officials, in their zeal to expand irrigated agriculture, may violate local law, or even, national law.

These cases raise the question of equity but how are we to address this difficult question? Are we to emphasize only the principle of eminent domain and focus on wider public benefit by increasing command areas and agriculture production? Are we to ignore customary laws and local rights and go strictly by state laws? Or are we to uphold customary laws and local rights even if the existing rights holders monopolize all or most of the water? How do we strike a balance between respecting the rights of existing rights holders and the claims of those who are excluded? And who is to decide these issues?

If we consider the examples of direct state interventions in the cases discussed above and other cases, as well as indirect interventions by the various laws (Acts, Regulations) enacted, it appears as though the state reserves for itself the responsibility and right to decide how water should be utilised and shared. While the earlier interventions and laws (Muliki Ain) supported, to a great extent, customary laws and local rights, latter interventions, especially in projects involving international finance, seem to disregard local laws and rights. The Water Resources Act 1992 vests

ownership of all water resources within the kingdom in the state and the state then decides how water is to be utilised and allocated. This way of utilising water may be more efficient and productive than the old ways but is it more equitable? When we speak of democracy and decentralization, surely we must also speak of respecting local law and rights.

Yoder, Martin, Barker and Steenhuis (1987:4) identify four issues concerning equity from a community perspective, very similar to the three elements suggested by Martin (1986: 21) earlier. According to them, equity concerns from a community perspective include these four issues:

1. Do farmers within the systems receive water to which they are entitled?
2. Do farmers at the head of the system receive more water than those at the tail?
3. Is there a relationship between the share of benefits received by individual farmers and the proportion of the costs of operation and maintenance assumed?
4. Do all farmers have rights to access water?

These authors ignore three important issues regarding equity. First they do not discuss the differences between different stakeholders in their definitions of equity. They assume that all members of a community agree on a common definition of equity. But different stakeholders may perceive these elements differently and the perspectives of the dominant farmers group and the intervening agency may differ. Secondly, they do not discuss the question of equity between different systems sharing water from the same source. Which systems have or do not have legitimate access to water from the same source and the basis for the access or lack of access are important equity (and water rights) issue. And finally, they have not concerned themselves with the consequences of state interventions in FMIS for equity. State intervention often opens up a Pandora box of conflicting claims to property relations and water rights and the basis for equitable allocation of water rights and obligations.

The rights that the users have to water are not always equal. Water rights are generally related to the past and present investment or contributions to the system; the users contributing more usually have more rights and (sometimes) higher priority than those contributing less. Further, the users differentiate between 'original' rights holders and 'latecomers'; original contributors usually have more rights or higher priority to water than latecomers (Ambler 1990). In many cases, water allocation is based on these factors (share of investment; original investors or latecomers) rather than on the size of irrigated land (cf. Martin 1986).

It is clear then that leaving the decision to the local communities do not always ensure that water rights are equitable (cf. F. and K. Von Benda-Beckmann and Spiertz, this volume). Local law can be very unjust and inequitable: the existing rights holders, usually the local elite, often deny irrigation to new areas even when water is abundant. Further, the stakeholders do not always agree on the criteria to be used to define equity.

State interventions in farmer managed irrigation systems have many implications and ramifications. In this paper we discussed issues related to law, rights, and equity, to indicate some of the problems faced by local communities when the state intervenes in their irrigation systems. At this stage we are reluctant to suggest recommendations because this topic requires further research and moreover, as pointed out in the Introduction to this volume, some of these issues require political, more than purely research, solutions.

NOTES

1. This paper is a revised version of the paper presented at the workshop on "Water Rights, Conflict and Policy", January 22-24, 1996, held in Kathmandu. We are grateful to the discussants and Franz von Benda-Beckmann for incisive comments.
2. Consultant, IIMI/Nepal, Acting Head, IIMI/Nepal, and Program Officer, Ford Foundation, New Delhi, respectively.
3. Intervention by the state in existing irrigation systems may be either direct or indirect. The state intervenes directly a) by rehabilitating, extending and improving the system either through its own implementing staff or by the farmers under their supervision, b) by making changes in the organisation and institutions as well as water management activities of the irrigators, and c) by administrative support to one of the disputing parties. It intervenes indirectly by changing laws, policies, regulations, etc. relating to irrigation (cf. U. Pradhan 1990).
4. IIMI\ WECS (1989); WECS\IIMI (1990); RTDB\IIMI (1995). Also Martin Edward and Robert Yoder's theses; U. Pradhan et al. eds. (1992); Ujjwal Pradhan's and Ganesh Shivakoti's theses the latter supported by IIMI from Ford Foundation grants.
5. It needs to be mentioned that water rights issues have not been ignored. The first major water rights study was carried out for the Ministry of Law by APROSC in 1985 (*Study on Water Rights Law - Nepal*); another study entitled "Water Use Conflicts and Their Resolutions in Selected Irrigation Systems of Nepal", was conducted by Irrigation Management Center (IMC), Pokhara; 1990. These are in addition to the publications by Martin and Yoder (), Yoder, Martin, Barker and Steenhuis (1987). See also Martin (1986); U. Pradhan (1990; 1995).
6. For example, in the 1990 publication by WECS and IIMI, *Assistance to Farmer-Managed Irrigation Systems*, based on their action research project, the lessons learnt and recommendation deal mainly with ways to reduce the cost of assistance to farmer managed irrigation systems, to increase maximum production of food and to enhance farmer-management capability for operation and maintenance (ibid 12). This small report does mention water rights issue in several places but does not give it the importance it deserves. For example, one of the lessons learnt from the action research is: "Farmer participation results in: cost savings, mobilisation of farmer resources, sense of ownership, and improved ability to manage" (ibid: 5). And one of the recommendations suggested is: "The users' organisation must agree on water-allocation and resource-mobilization rules and procedures before physical improvement begin" (ibid: 39). No mention is made of the social dynamics between the farmers and the farmers and the state which determine to a large extent how water is allocated and resource mobilised. Similarly, in the 1995 RTDB\ IIMI publication, *Improving Support Services to Farmer Managed Irrigation Systems in Nepal*, many of the papers discuss the consequences of intervention (support) in FMIS in terms of increase in command area, production, and cropping intensity, decrease in cost of rehabilitation due to farmer participation, improvement in system management by the users, institutional development, etc. Only passing remarks are made on water rights, equity and conflicts (by Shivakoti and Pradhan; B.B. Gurung; and Tuladhar).
7. The issue of water rights in Nepal have been discussed mainly by U. Pradhan (1984, 1990, 1995) from a property perspective. Martin (1986) addresses this issue in his thesis. P. Pradhan (1989) mentions this issue without any serious discussion.
8. This paper is based on fieldwork carried out for the joint IIMI/FREEDeAL research project titled, "Water Rights in Nepal" which was funded by the Ford Foundation. The study attempted to document and analyze the dynamics of water rights, the relations between customary and state laws, and between state and locality in farmer managed irrigation systems in three districts of Nepal. Field studies of water management activities as well as water related conflicts and conflict management processes were done (Papers by Khatri-Chhetri and Pradhan, M. Pradhan and R. Pradhan and this paper in this volume). Water related laws and policies as well as court cases

- were collected and analysed (Khadga, Khanal and Khetri-Chhetri, this volume.) A quick survey of 40 farmer managed irrigation systems was also conducted (Malla and Khadga, this volume). As part of the study, IIMI also first conducted fieldwork and then sub-conducted research on inter-sectoral water use and conflicts in the Upper Bagmati Basin (Dixit, this volume).
- 9 The farmers of irrigation systems downstream of Telia Kulo in Dang too destroyed a part of the permanent diversion structure constructed by the Department of Irrigation with foreign grant to protect their water rights. The leaders were arrested for a day and then released on the condition that they presented themselves at the zonal commissioner's office to present their case (see M. Pradhan and R. Pradhan, this volume).
- 10 The **RRA** report as well as subsequent reports by IIMI/WECS did not discuss these conflicts or raise the question of water rights between systems. This is quite surprising considering the fact that key IIMI/Nepal personnel had already written about water rights and conflicts between systems over such issues. These issues were probably not discussed precisely because the state (and donor agencies) were more concerned with expanding irrigated agriculture than water rights issues.

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