

Gender and the Multiple Contingencies of Water Rights in Nepal¹

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Introduction

In the past years, gender relations in water management in Nepal have increasingly captured the attention of academic and policy oriented circles. Though only few empirical studies have been made so far,² the interest is growing and Nepali NGOs and IWMI have initiated new research (Merrey 1997). The concerns are the same as those that have led to attention to gender and rights issues in agriculture in other countries.³ First, and in the most general way, it is a reaction against research and policy making that leaves about half of the population unaccounted for. In Nepal, which depends for 90 percent of its GNP on agriculture, women play a major role in agricultural production. Acharya and Bennett estimate that 57 percent of adult input time into subsistence agriculture and related activities come from women, who contribute half the household income (Seddon 1987: 193). Participation of women in irrigation varies, but sometimes reaches as much as 50 percent of irrigation activities. Yet, until recently, their involvement remained largely unnoticed. Secondly, there is the socio-political and moral concern with the fundamental imbalance which characterizes gender relationships in Nepal ideologically, legally and in social practices. In the dominant Hindu religion, women are assigned social and economic positions

¹ This contribution is largely based on the paper "Gender, law and rights to land and water" which we presented at the Kathmandu Workshop in March 1998 and on a paper which we presented at the IUAES Conference in Williamsburg (F. and K. von Benda-Beckmann 1998). It comes out of our involvement in legal anthropological research training and supervision on water management and water rights. The project started in 1993 and is sponsored by the FORD Foundation in India. For earlier publications resulting from this cooperation, see R. Pradhan et al. eds. 1997, K. von Benda-Beckmann, H. J. L. Spiertz and F. von Benda-Beckmann 1996, and F. von Benda-Beckmann, K. von Benda-Beckmann and O.K. Spiertz 1997. We are grateful to researchers from FREEDAL and the Mountain Research Management Group, IIMI-Nepal, the IWMI gender, poverty and water program, and IAAS who shared their research experiences with us. We also thank Ruth Meinzen-Dick and Rajendra Pradhan for their valuable comments on an earlier draft.

² See the work of Zwarteveen and Neupane 1996, Bruijns and Heijmans 1993, B. Pradhan 1983. See also the contributions of Bajracharya, van der Schaaf and Pun in this volume.

³ See Meinzen-Dick et al. 1997, Zwarteveen 1997, Agarwal 1994, Van Koppen 1998a, 1998b, Merrey and Baviskar 1998, Boelens and Davila 1998.

that are principally subordinate to those of men.⁴ Decision making processes, within and outside the household, are usually dominated by men. Women have less right to productive resources than men; the rights women have are mostly weaker than those held by men; and these weaker rights are largely derived from the stronger rights held by men or social units dominated by men. And generally, even the rights women have often cannot be asserted in social and economic life. Thirdly, studies of gender relations in irrigated agriculture and of intervention practices are critical not just on account of the inequitable consequences for gender relationships. They also emphasize in a more instrumentalist way the importance of more equal gender relations for the improvement of the general welfare of the rural population, as well as for a more efficient use of water (Agarwal 1994). Interventions in irrigated agriculture tended to be, and still are heavily informed by technological and economic considerations. In as far as local social and economic organisation is taken into account at all, irrigation is predominantly seen as a 'male domain' and men are seen as the main addressees by external agencies. The considerable role women play in irrigating as well as their lesser, derived rights to water remained largely unrecognised. As a consequence, gender specific needs for water tended to remain unexamined. The awareness of existing inequalities and their social and economic consequences has intensified with the increase of state or donor initiated actions to improve agricultural production through the construction of new irrigation schemes or the expansion and rehabilitation of existing systems. The concern for differential impact on gender relations has now joined the earlier, but gender-insensitive attention given to differential impacts of intervention in terms of people's social and economic power.⁵

In the discussions about the position of women in irrigated agriculture in Nepal and in the remedies suggested for change, the issue of property rights in general, and water rights in particular, plays a very central role. The non-existing or weak water rights of women have been held to contribute significantly to their weak social and economic position, and it has been advocated that their position should be changed by giving them independent rights to water.⁶ Although the recent literature on gender, property and water rights has generated important new empirical material and theoretical insights, we think that there is a need for further refinement.

First of all, most authors writing about 'rights' do not distinguish between 'categorical' and 'concretised' rights. Categorical rights define in general terms the legal status of categories of persons and property objects as well as the type of rights and obligations between persons with respect to property objects. An example would be that "heirs of land within the command area of an irrigation system are entitled to inherit the right to water in the irrigation system". We speak of concretised rights

⁴ Hindu religion is the official religion of the Nepali kingdom. For its significance in social and political life, see Burghart 1984, Gray 1995, Gellner et al. 1997.

⁵ See U. Pradhan 1990, Chambers 1994, Zwartveen 1997, Meinzen-Dick et al. 1997, van Koppen 1998, Merrey and Baviskar 1998.

⁶ Agarwal 1994, Zwartveen 1997, van Koppen 1998a.

when the legal criteria of a categorical right are inscribed and become embodied in a social relationship between actual persons with respect to actual property objects. An example would be the statement that "landowner A has a right to a turn in the rotation scheme in irrigation system X". The social processes through which categorical rights and concretised rights are established, the ways in which categorical rights are transformed into concretised rights, and through which both categorical and concretised rights are effectuated are quite different.⁷ Second, there is often too little attention to the range of rights and obligations that are considered 'water rights', both categorical and concretised. The term water rights is sometimes used for the distribution and allocation only, while others regard all rights and obligations related to water as water rights.⁸ Analytical umbrella concepts such as access and control and the bundle of rights metaphor need further differentiation of the aspects or types of legitimate action that are bundled in (empirical) categorical and concretised rights.⁹ We suggest that it is useful to consider the full scope of aspects of rights and obligations that cover socio-political control and uses of water, both in the private and public sphere, and at individual and communal levels. Thus full member of a water user association or the state appointed controller of water distribution in the branch canal have a water right just as a land owner or a share-cropper, the difference lying in the scope and kind of legitimate action each of these rights conveys, and the scope and kind of obligations attached to them. Third, there is a tendency to treat rights to water as a distinct set of property rights. While the connection between land rights and water rights is increasingly noted (Meinzen-Dick et al. 1997), we think that the complexities of these interrelationships deserve further exploration. Fourth, too little attention is given to conditions of legal pluralism where rules and principles of different origin and legitimation co-exist in the same locality.¹⁰ The content of categorical rights, the ways in which they are bundled, the holders of such rights and the connection of land and

⁷ For an elaboration of this distinction, see F. and K. von Benda-Beckmann 1994, F. von Benda-Beckmann 1995. Compare Schlager and Ostrom (1992) who fail to make this distinction. In their words, the term "rights" refers to particular actions that are authorized, while the term "rules" refer to the prescriptions that create authorizations (1992: 250). While this conceptual clarification is useful, it should be noted that they talk about categorical rights only. They do not address the crucial significance of the social processes through which categorical rights have to be transformed into concretised rights. However, much of the gender inequality is precisely a result of this process of transformation.

⁸ In the political debate about whether women should have rights to water, the term water right often seems to be preserved for the allocation or distribution, or a share of water only. For example, van Koppen (1998a: 141) states "[i]nclusion in forums or water users' associations is a 'proxy' for being vested with resource rights." She regards membership of a water users association as "recognition of water rights", not as an element of the water right itself.

⁹ See for further differentiation of the bundle of rights Wiber 1991, Schlager and Ostrom 1992, K. von Benda-Beckmann et al. 1997; F. and K. von Benda-Beckmann 1996, F. von Benda-Beckmann, K. von Benda-Beckmann, Spiertz 1997.

¹⁰ For a discussion of legal pluralism with respect to water rights, see F. von Benda-Beckmann et al. 1997. The distinction made between *de facto* and *de jure* rights which is made in resource management studies (Schlager and Ostrom 1992) also expresses awareness of plural legal conditions.

water rights are often defined differently in different legal systems. At the local level, the dominant constructions of categorical rights often are hybrid legal forms consisting of elements taken from state legislation and older or more recent local traditions ('local law'). The elements of these hybrid forms are inscribed in the concretised rights, for relations of legitimate authority and socio-political decision making as well as for legitimate forms of appropriation and use. This is particularly relevant for the final point we want to make. Studies of gender in irrigated agriculture have a tendency to focus too exclusively on gender as the most important social differential, not relating it to other social differentials such as caste and class. Constructions of gender categories and relations certainly are all-pervasive.¹¹ They are expressed in general cultural and religious ideas about the appropriate nature, status, rights and obligations of the genders. They are also defined into the categorical normative frameworks of institutions and organizations. Such definitions of rights and obligations may differ from the more general cultural-religious or ideological gender constructions. They are usually also different in state and local laws, and there are considerable differences between local laws as well. Moreover, gender constructions of rights are often different for categorical and concretised rights. While categorical rights can be defined as gender-neutral, all actual social relationships and concretised rights and obligations are gendered. But while gender relations are one of the most "enduring inequalities" (Tilly 1998), they are not the only one. The political-economy of Nepal is characterized by a profoundly unequal distribution of economic and political power, and a fundamentally in egalitarian socio-religious ideology and social practice (Seddon 1987: x, xi). Land ownership is highly skewed. Social, economic and political life, especially in the Hinduized areas, is largely organized along caste (*jat*)¹² differences that shape any individual's legal status and permeate all social relationships, and local categorical and concretised rights in particular.¹³ Moreover, social differentials based on common kinship, class or caste, or occupation form the basis for the formation of social and economic groups in which gender, as a category is only secondary. This means that the relation between the factors gender, class and caste needs to be explored.

In this contribution we want to draw attention to what we call the 'multiple contingencies of water rights'.¹⁴ With this we refer to the condition that water rights are contingent upon a variety of legal and non-legal elements, on land rights, family

¹¹ Gender refers to "socially learned behaviours and expectations that are associated with members of a biological sex category" (Andersen 1988: 48).

¹² The term *jat* refers to both caste and ethnic group. The Hinduized ethnic groups have been incorporated into the caste system. In this paper we use the translation caste, but it should be kept in mind that this may include references to ethnic groups.

¹³ Gray (1995: 7). On the historical development and contemporary caste differences, see Burghart 1984, Seddon 1987, Gray 1995, Sharma 1997. See also the contributions of Pradhan and Poudel in this volume.

¹⁴ We confine our discussion to irrigation systems that derive their water from rivers and which are farmers' managed. This is by far the majority of irrigation systems in Nepal. Privately owned springs, very small, privately owned systems that derive their water directly from a small stream as well as groundwater systems will not be dealt with here. Neither will we discuss government managed systems.

relationships, political organization and ecological conditions. We want to show that apart from discrimination at the level of categorical rights, these contingencies make it particularly difficult for women to actually acquire rights which they *could* hold under the current legal regime, or to maintain those rights after acquisition. Furthermore, we shall also show how these factors affect women differently depending on their caste and their social, economic status.

Before turning to gender differences in the structure of categorical and concrete rights to water and to the processes in which categorical rights and concretised rights can be effectuated, we shall discuss the general contingencies that condition water rights in Nepal: the connection between water rights and land rights, the specific combination of land-based water rights and socio-political specification, and the additional conditions for maintaining rights. We shall then show how characteristic features of Nepal's political, economic and geomorphic conditions lead to a highly dynamic and flexible relation between rights to appropriate and use water, land rights and socio-political decision making. Thereafter we shall go into the gendered nature of land and water rights and show how the multiple contingencies of water rights place women in a particularly difficult position in acquiring and effectuating water rights. By way of conclusion we shall argue why we do not fully share the idea that "the *biggest impediment* [our italics] to establishing legitimacy for women's need for individual water rights is the astounding lack of recognition of women as irrigators and water users" (Zwarteveen 1997: 1346). While we agree that there is a formidable problem there, we suggest that greater difficulties for changing gender relations in irrigated agriculture in Nepal lie in the connections between land and water rights, and in the way in which these form part of a wider set of socio-legal relationships.

The contingencies and dynamics of water rights in irrigation systems

The relations between land and water rights

Rights to water are rarely rights that isolate water as an object of rights completely from rights to the land on, under, or adjacent to which water is located (F. von Benda-Beckmann et al. 1997: 224). Often, in the case of groundwater and water in wells, rights to water are directly tied to rights in land. In irrigation, rights to water are often derived from rights to land. Under the present legal regime,¹⁵ unless the state government has taken over an irrigation system, the major general rules and principles embodied in the Muluki Ain and local laws are: Landowners participating by their own labour or expenses in building a canal obtain inheritable priority rights over the water in the canal. The labour input of tenants is usually ascribed to the landowners. One may not control more water than one can use for one's own purposes. Surplus water must be shared with minor rights holders or even outsiders. First users have priority over newcomers. Migrants need the consent of original settlers to build a

¹⁵ See Khadka 1977, Pradhan in this volume.

canal, and fields irrigated of old (*sabik*) have prior rights to water over all others. Finally, full rights in an irrigation system involve certain obligations: To retain one's right to water, one must contribute to the maintenance of the system. Full rights imply a right to a share of water both in monsoon and in dry season irrigation.

In Nepal, local rights to share in the water of an irrigation system thus are attached to the rights to fields in the command area. These fields are owned by individual or joint owners who live together with non-owners in households. Water rights may be further specified with respect to types of fields and crops. Title-holders to irrigated fields (*khet*) or dry upland fields (*bari*, *bhit*) may be entitled to different water shares. It is as a holder of rights to land that person, male or female, households or larger communities are in the position to claim and appropriate water for irrigating their fields. Rights to water are almost always transferred with the right to land, whether by purchase, gift or inheritance.¹⁶

But while there usually is a close connection between water and the land on or adjacent to which it flows, water rights have a different character than those to land due to the physical-natural characteristics of water. Water is a fugitive resource and exists in a transitory state. Because of its fluidity, the same source of water is generally used by more than one user. Because of its fluidity water rights cannot be 'fixed' in time and space as easily as rights to land. In contrast to rights to land which can be defined with respect to a clearly demarcated part of the environment, water rights are nearly always defined as relational with respect to other users (Hammoudi 1984). The distribution is structured by various technical devices such as canals, diversion heads, weirs, etc. and by a variety of distribution principles, e.g., first come-first serve, rotation schemes or volumetric calculation. The actual amount of water to which a concretised right pertains is 'fixed' through the natural flow of water and social processes of allocation, distribution and appropriation. These processes occur at different levels of an irrigation system; from the division of water between systems drawing water from the same river, the distribution between main and branch canals down to the distribution over field inlets. While the flow of water is a more or less permanent process, this specification or 'fixing' of the substantive quantity of water rights has to be done or maintained every day, and may vary with and during day and night time and over the seasons.

The actual connection between land and water rights thus is highly variable. It varies in particular with the kind of distribution adopted. A distinction must be made between water abundance and water scarcity. In water abundant areas during the monsoon, water flows continuously and right holders may tap freely. Abundance and scarcity, however, to a large extent depend on the crops that are under cultivation. This means that, though there is more water during monsoon than during the winter season, during monsoon water may be scarcer, so that only rice fields (*khet* land) may be irrigated, whereas during the winter season owners of unlevelled land (*khet/pakho*

¹⁶ Sodemba and Pradhan in this volume report one dispute in the Ilam region in which a landowner claimed to have sold a plot of land without water rights, a claim vehemently contested by the buyer.

or *bhit*) are often entitled to irrigation water as well. If there is not enough water, a distribution system has to be developed at the different levels of the irrigation system. This usually is based on rotational use, often a combination of several rotational principles, each adjusted to a particular phase in the cropping cycle. There is considerable variation in the basis upon which rotation takes place in terms of duration, volume and order. At the level of individual fields, the share of water is generally related to the size of the fields, but there are cases in which the quality of the soil, as well as the kind of crops is also taken into account.¹⁷ The order of water application may start with the head-reachers or with the tail-enders. Which option is chosen is not unimportant, for generally speaking it is of advantage to be among the first to receive water in a rotational system. The volume that goes into branch canals may depend on the total area that is to be served by the branches, or on the labour and financial input in the maintenance of the main canal. But it also may be shared in equal shares, independent from the size of the land in the respective command area. Or it may be determined by the relative socio-political strength of individuals or groups within the system (Shukla et al. 1997).

Socio-political control

Due to the characteristics of irrigation systems and the water flowing in them, water, more readily than land, is perceived and legally treated as a common good over which socio-political organizations such as the state or villages claim the right to regulate and distribute it.¹⁸ In farmer managed irrigation systems, socio-political control over water is bound into a wider network of supra-household organization, consisting of influential local leaders, former *jimidars* or Water User Associations. The distribution of water may also be controlled by specially appointed functionaries (*pani pale*), who receive compensation for their work, organizing water distribution and monitoring rotation schemes.¹⁹ Individual rights remain contingent on socio-political decision making and therefore rarely reach the level of economic power in ownership type of rights (see Zwarteveen 1997: 1339).

Maintenance of water rights

Maintaining water rights over time is further conditional on the landowners' or land users' contribution to repair and maintenance of the irrigation system. Every year the canals have to be cleaned and repaired before the irrigation season starts. If there are

¹⁷ Over time an irrigation system may change its rotation principles several times. Durga K.C. and R. Pradhan (1997) report that a system in Tanahu district started out with a water distribution system for monsoon rice in which a period of continuous irrigation was followed by two different rotation systems. With the introduction of a new rice variety they turned to a three stage rotational system for monsoon rice. See also Van der Schaaf in this volume.

¹⁸ For the legal history of state legal regulation on land and water, see R. Pradhan in this volume. See also Regmi 1971, Benjamin 1994, Khadka 1997, Shivakoti et al. 1997.

¹⁹ Over time, systems may employ different operators and controlling officers (e.g., Durga K.C. and R. Pradhan 1997). It may be done by a professional operator who is appointed and paid by the users. In many cases officials from among the users are appointed to do the work.

no permanent diversion works, these have to be rebuilt every year. But semi-permanent or permanent head works are also frequently destroyed due to heavy monsoon floods and landslides. These labour obligations to contribute to the maintenance of the system are divided over households as constituent units of the local socio-political organization. The calculation of their obligations can be based on the size of the land they possess but it may also be based on the number of persons or households in the respective areas (see Shukla et al. 1997). However, only (members of) households holding land in the command area may take part in maintenance and operation activities. The same goes for tenants or sharecroppers: their rights to water are derived from the landowner's rights to the land.

These factors make the interrelation between land and water rights in irrigation systems quite complex. The rights to appropriate water are tied to land rights, but the actual specification or 'fixing' of water rights in terms of volume or time share is also dissociated from the land through processes of socio-political decision making over water as an object of communal rights and processes of appropriation. The right to the water which has been appropriated, on the other hand, is very similar to a normal private property right. Ostrom's distinction between "resource systems" or "stocks" and "resource units", what individuals appropriate and use from resource systems (1990: 31), is helpful but needs further elaboration. For what is "common" or shared property in the resource system, i.e., the water in the irrigation system, and what is a resource unit, i.e., the water appropriated (Ostrom 1990: 30), is relative to the structure of the irrigation system and the socio-political organization of decision making (see also Wiber 1991). Water in the fields is the resource unit in relation to the resource stock, the water in the irrigation branch canal. But in relation to the resource stock in the main canal, the water in the branch canal can also be seen as a resource unit appropriated by the right holders in the branch canal service area. And in relation to the river feeding several irrigation systems, the water in the main canal may be seen as a resource unit, appropriated by the community of the canal command area.

The dynamics of water rights in Nepal

We have sketched the conditions that require repeated specification of what water rights mean in a specific social and ecological context. The criteria for this specification largely have the character of principles rather than of rules. Negotiations and fights over rearrangements of water allocation and in the agreements and settlements that are reached reflect which of the principles are followed and in which hierarchy. Apart from the seasonal variation in water rights, there are additional factors that necessitate repeated readjustments and renegotiations in which water rights are concretised, both with respect to the allocation, i.e., the official, valid assignment of rights to water shares, as well as to the actual distribution of water over social units and irrigation systems (see Shukla et al. 1997, K. von Benda-Beckmann et al. 1997). A number of factors give the water rights system in Nepal a particular dynamism.

One is *socio-economic*. Irrigation development in Nepal in many areas, particularly in the Terai, has all the characteristics of a frontier. This process which started with the land reclamation schemes centuries ago has not stopped yet.²⁰ Migration and normal population growth demand the expansion of irrigable land. This sets one of the preconditions for the continuous flux in irrigation arrangements and the constant renegotiations of water rights.²¹ In the more recent years characterized by increased intervention from the Department of Irrigation and donor projects, government sponsored rehabilitation of irrigation projects has combined with or even taken the place of purely local activities. In existing farmers' managed systems that are rehabilitated, clarification of water rights is also necessary because rehabilitation always entails principles based on local law and on the law of the state or donor agencies which come to interact in the rehabilitation process. These rights may be mutually exclusive, although this is not necessarily the case. Though agencies designing and implementing the rehabilitation may wish differently, it is not certain from the outset which set of rules and principles takes priority over the other. This is a frequent problem because intervention agencies are rarely aware of existing local regulations, let alone willing to build upon them for the renewed and enlarged irrigation system. Instead, new rules are usually designed as if there were no prior rules in place before rehabilitation. The new rules enable those 'setting the stakes' to play out the state water right authority and ideas about 'beneficiaries' against their opponents' claims based upon the existing structure of water rights. In these struggles over the concretisation of water rights, each set of rules provides a repertoire of accepted justifications and options for possible arrangements, but none of them leads unequivocally to one particular solution.²²

Second, *changing political and administrative relationships* between villages, irrigation farmers, and especially local leaders contribute further to the frequent attempts to rearrange water rights. Such conflicts tend to be embedded in political rivalry among dominant families who have all allied themselves with various political parties. This political dynamism has a long tradition in Nepal. Under the Rana regime, when relations of political and economic patronage were still relatively simple and undifferentiated, positions of governmental and economic authority were highly unstable. Officials, district governors, tax collectors, especially at intermediate levels, were appointed and dismissed quite frequently (see Caplan 1975). The regularity with which regional and local power relations changed has continued under the new administrative regime. This process has provided a set of differentiated positions of administrative and economic power over resources in different governmental departments and district and village councils, which overlap with the more traditional powers of former *jimidar* and other traditional leaders, many of whom managed to combine, or exchange, their traditional authority with the authority of the state

²⁰ See the cases described by R. Pradhan, Haq and U. Pradhan (1997) and Durga K.C and R. Pradhan (1997) which illustrate the gradual expansion of irrigation systems and the constant renegotiations between old water users and new claimants.

²¹ See also the case from Ilam District described by Bajracharya in this volume.

²² This provides many opportunities for forum shopping and shopping forums (K. von Benda-Beckmann 1981). See the case studies in R. Pradhan et al. 1997 and Khadka in this volume.

administration or political parties. Moreover, Nepali party politics are highly volatile, new coalitions coming into power nearly each half year. Any change in local power relations thus is seen as a good reason to question previous water rights arrangements, as an attempt to finally implement earlier agreements, or to force new agreements that are more favourable to one's own irrigation system. This is further complicated by the fact that often the traditional political-economic jurisdictions were largely based on land grants and the irrigation system was an integral part of such area. In the newly developed system of territorial-administrative relations, however, administrative boundaries and property or irrigation boundaries are rarely congruent. Rivers and streams are the axis of irrigation systems, but often form the natural boundary between villages, areas under one socio-political control. Problems about the location of intakes for irrigation systems, questions of whether and where new intakes could be constructed, thus regularly lead to conflicts between socio-political communities.²³

Finally, there are *geomorphic* reasons that necessitate regular rearrangements of the irrigation infrastructure and water rights, such as the frequent occurrence of floods, changes in the flow regime of the streams, and changes in the diversion infrastructure.²⁴ This requires new negotiations over intakes, the relocation of main canals and often even secondary channels, and water distribution within canals.

Given this need for frequent renegotiation of specific water rights, it becomes crucial for individual water users to be able to participate in such negotiations. As we shall see, women usually are excluded from the forums in which these negotiations take place and decisions are made.

Gendered rights to land and water in irrigation systems

Against the background of the specific Nepalese general structure of water rights we shall now retrace our earlier steps and look at the ways in which gender enters the structure of land and water rights, socio-political control and the concretisation and effectuation of water rights.

Gender and the land-water right connection

In terms of categorical rights, both men and women can be holders of the fullest rights to agricultural land. Ownership titles can in principle be registered in a woman's name. While women can purchase land and be a recipient of a gift which transfers land rights,²⁵ they are, however, limited in their rights to *inherit* land, according to

²³ An extremely interesting example of these historically shifting boundaries of irrigation units and socio-political jurisdictions over water allocation is provided by Adhikari and R. Pradhan in this volume. See also Khadka in this volume.

²⁴ See Shukla et al. 1997, K. von Benda-Beckmann et al. 1997: 1-57.

²⁵ This is mainly the case for *raikar* land which is not subject to the limitations of inherited property. In Terai communities women sometime buy land from their dowry. They become full owners, but upon their death it is inherited by sons, not by a daughter. Prabina Bajracharya and Amita Tuladhar, who have come across examples in West Gandak during their IWMI research on gender, poverty and water in Nepal (personal communication).

both state and local law. But apart from the discriminatory regulation of inheritance, women's abilities to acquire independent concretised rights to land, and consequently to irrigation water, are limited for other reasons. This has to do with the way in which social organization, kinship and marriage, and property relationships are interwoven.

The core units holding agricultural property, at least in the Hinduized regions are patrilineal segments (*santan*) comprising two or three generations, around which households (*pariwar*) are formed.²⁶ Women belong to their father's patrilineage until they marry. Upon marriage they become a member of their husband's patrilineage. By marrying his wife, the husband fulfils his *dharma* (Gray 1995: 49). Accordingly, wives are subordinated to their husbands. Land is the source of origin, reproduction and unity of the patrilineage. The patrilineage relates to land as a collective - within it respect (*mannu parne*) provides the discursive idiom in which gradations of control of the land (and power) are practised (Gray 1995: 147). It is the patrilineage of men who have superior rights of control over land (Gray 1995: 50). The formation and division of households is intimately linked with the property relationships and inheritance to land. Inheritance is patrilineal. Most land is acquired through one's father by inheritance. Through their birth, sons become right holders in their father's property, or rather, the property of their father's *santan*. Even if the land should be registered only in the name of the father, father and sons become co-parceners in the joint estate.²⁷ After marriage, and especially after sons get children, the joint property can be partitioned. With the partitioning of the land, the joint family is partitioned as well, and the sons start to build and run their own household. Often a more informal separation of a son's family from his father's house precedes the official partitioning of the household and the joint property. Tensions between brothers, and after marriage, between their families, over the use and distribution of benefits of the land are frequent. Partitioning is seen as reflecting the tensions and struggles between the emergent new families, as a denial of the collective spirit and the authority of the father. It is therefore often deferred until after the father's death.

Women, as daughters, only have inheritance rights in land if they remain unmarried until the age of 35. This is an extremely rare occurrence.²⁸ Their rights to household property are seen as being compensated by the dowry they get upon marriage. Should they return to their natal household - most marriages are virilocal - they only have a right to maintenance from their patrilineage's land. When they marry, they acquire a

²⁶ See Gray 1995. Especially in the Hinduized population, households are of central importance in everyday life as the cultural, social and economic unit. It is through being a member in a household that Nepali men and women perceive and experience social life within and outside the domestic sphere. As Gray says, for Hindus, everyday life is domestic life (Gray 1995: 26).

²⁷ Inheritance refers to the whole process of inter-generational transfer of property. While in some legal systems this transfer occurs typically upon the death of an inheritor, in Nepal transfer starts at the birth of a son, when they become co-parcener. They are entitled to request partitioning of family property during the lifetime of their father. Becoming co-parcener upon birth and partitioning are part of a long process of inter-generational transfer of family property and are therefore regarded as part of the wider concept inheritance.

²⁸ See Gray 1995: 145. And even then, should a woman marry at later stage, she will lose her right to the inherited property.

right to be maintained, but do not get independent rights to land of their husband's family. They work on the land of their husband, or of their husband's family in case partition has not taken place yet. If a man dies without leaving sons, the widow officially inherits his property, or his share in the joint property if partition has not yet taken place. Legally, such land can be registered in her name. If widows remarry, they have to return such property to their husband's lineage. However, widows of high castes are not allowed to remarry.

Registration of land in a wife's name is a rare occurrence, especially in the case of family land, and is usually strongly opposed by her husband's family, who are afraid that the land could eventually be inherited by her daughters or be transferred by her as a gift to someone outside the husband's lineage.²⁹

Given the close connection between land and water rights at the field-level, water rights are almost always vested in men, because land, especially in the villages where married women live, is generally the land owned by their husband's patrilineage in joint or partitioned ownership.³⁰ The land rights-household-inheritance nexus therefore also defines her rights to irrigation water. This is the case for women as a member of a household in which her father-in-law or her husband is the landowner and the person to whom the woman stands in a subordinate position. It also holds for women in the position as a temporary or near-permanent head of a household. Whatever rights women can claim is claimed on the basis of their derived rights, as a trustee for their sons or absent husband.

The position of married women, however, also varies with the position her husband, herself and children - in particular sons - have in the household, i.e., whether the household is (still) joint or partitioned. Although the familial relations of authority over persons and property are not fully severed, partition removes her somewhat from the relations of dominance with her husband's parents and the potential antagonistic relationship with her husband's brother(s) and their families.

Structurally, a married woman is in the most vulnerable position when her husband migrates, when he is seriously ill for a longer time, or when he dies. The high rate of migration has put the burden of most agricultural work on the shoulders of the women staying behind, who have to run their household during their husband's absence. The absence of the husband will shift the burden of agriculture entirely to his wife and children when they are old enough to work on the land. Ploughing has to be done by wage labourers because that is considered men's work (Bruijns and Hijmans 1993: 43). Due to the high rate of migration in some areas, this affects up to 30% of all households (Bruijn and Hijmans 1993). The probability that such a woman will be disadvantaged in discussions about the partition of the joint estate is great. She has no male support in the negotiations and struggles over the possible partition of the property, because her brothers-in-law are her immediate rivals. Her relative strength depends

²⁹ Van der Schaaf (this volume) found that in some cases in Rupakot land was indeed registered in a wife's name. But the women had no full control over the land. Alienation would not be tolerated by her husband's families.

³⁰ Gray (1995: 144) calls the right of married women a status-based "right of maintenance from the land".

also on the sex, number and age of her children. Should she only have daughters, the inclination to treat her fairly even by her father-in-law will be minimal, because she and her family will not be in the position to continue the patrilineal, and her husband's family faces the prospect that the land might be withdrawn from them through alienation by the wife or widow, or through the marriage of her daughters to a man of a different family. A mother with almost grown-up sons will have a better chance to be treated equally, with due respect and will have her land protected by her male in-laws. Much also depends on the quality of the relations between the spouses, and the other members and in-laws of the family (see van der Schaaf, this volume).

The extent to which women are dominated and oppressed within the family and individual household, however, varies considerably. The most important factors seem to be the social class of the household and its caste or ethnic affiliation (Seddon 1987: 193). There is also variation in women's involvement in subsistence agriculture and market oriented economic activities. It is usually high caste women who are under greater cultural-religious constraints to engage in other economic activities than subsistence agriculture, while women from tribal groups and even more from the untouchable *jats* have more leeway for doing so. On the other hand, given the fact that whatever rights in land women hold are derived from their husband or father's families, the kind of wealth they control or manage depends on the wealth of these families. There is thus a strange contradiction between the cultural-religious-legal and actual socio-economic possibilities women have. Wealthier and higher caste women are more likely to have the means to purchase land but are heavier constrained in engaging in economic activities outside the domestic sphere than low caste poor women.

Irrigation: appropriation and distribution of water

Apart from such structural legal constraints of acquiring concretised independent rights to land and water, women face great difficulties in asserting and effectuating their rights, whether independent or derived from their husband's rights. In most irrigation systems, women play an active role in the distribution of water and irrigating fields.³¹ Irrigating involves a number of activities such as opening one's own intakes, closing others, checking the amount of water in the field, and guarding one's own intake. Women's problems in actually getting water on their (husband's) fields vary with the seasonal relative scarcity of water, the organization of water distribution, and the location of the land. In principle during periods of water abundance, when no farmer has to wait until another has taken his or her turn, women and men alike have no problems getting sufficient irrigation water. The problems come with scarcity.

Water distribution is particularly problematic for women who have no husband around, if distribution systems are less clear or where there is no strong, well functioning distribution officer. This is the case, for example, when there is only just sufficient water, but not for all interested farmers at the same time. For reasons of water efficiency

³¹ See Seddon 1987: 193, B. Pradhan 1983, N.C. Pradhan 1989. In some regions, women do not irrigate *khet* land, see Prabina Bajracharya in this volume.

it may make sense to introduce an on-demand rotational system in which farmers demand water whenever and how much they want. Under this type of distribution farmers repeatedly have to negotiate turns and quantities; they also have to check closely whether the other farmers respect their turn. Often when they have opened their intake and return later to check, they find that somebody has closed it again. Such a distribution system therefore is rather unpredictable and susceptible to manipulation and power differentials. Under these conditions lower status, people from lower caste and especially women without a husband have a difficult time to get sufficient quantities of water at the right time. High class elite farmers may bluff their way in demanding more water at the most convenient time. Such a system potentially draws participants into bothersome quarrels over the distribution with others, an activity considered inappropriate especially for high caste women. The scarcer the available water is, the more problematic on-demand rotation becomes. For women these negotiations and quarrels with male and sometimes higher caste farmers are particularly bothersome. Women therefore prefer scheduled rotation schemes that guarantee some predictability (Bruijns and Hijmans 1993: 31).

When water is scarce, conflicts over water are common. During the peak-demand for water, when ploughing and transplanting rice in the monsoon there is severe competition among farmers to get a turn. Women have difficulties obtaining water under these conditions, and often only get water after male farmers have finished their irrigation (N. Pradhan 1989: 53). Moreover, it is considered to be inappropriate for women to go to the fields at night. This means in effect that they are unable to use their legitimate night turn, let alone engage in 'water stealing' and other ways of manipulating water distribution at night.

If water distribution is performed and monitored by specially appointed functionaries (*panipale*), the conditions for women improve. A strong and incorruptible functionary is especially beneficial for women. Problems and infringements of rotation rights may be reported to him and he also takes care of sanctioning. N. Pradhan reports that where there is a good organization of water distribution in place, women can take part in the distribution schedule as well as men. In some districts, women are even involved in irrigation during night hours, if the land is close to their residence. If their land is more distant, being out in the fields is risky and dangerous and nightly rotation turns cannot be used; going out at night is also disapproved on cultural grounds.³² In that case women have to rely on their male in-laws for protection and this is not always a reliable source for protection.³³

³² See N. Pradhan 1989: 53. Van der Schaaf (this volume) reports that in Rupakot, Tanahun district, the situation for women became much easier when the distribution official took over distribution.

³³ There is also some evidence that contradicts this. Meinzen-Dick and Zwarteveen (1998: 183) report that women who are not a member of a water user association profit from their liberty by taking water whenever they need it, without bothering about the distribution schemes that have been made by an institution in which they do take part. The association has great difficulties to bring them under control, because they have no way of sanctioning the women. On the other hand, the authors also point out that such access, that is not based on formal legal rules and sanctions, is not secure and more subject to unequal power relations than control over water based on democratically devised rules and principles (1998: 185). It is clear that this issue deserves further investigation.

Distribution control and decision making

While decisions concerning land, crop choice and the distribution of profit may be taken jointly by men and women, husbands and wives, female household heads and their husband's in-laws, women are largely excluded from decisions over the control and distribution of irrigation water. The reason is that these decision making processes are not made at the household level, but in communal forums and organizations. And these are very much the world of men. Depending on the organization of water control, the right to decide lies in the hand of powerful individuals or families, in informal meetings, or in meetings of a water users committee or association, where elite members often informally are in control.

Distribution schedules and the division of water between major and minor irrigation canals are often contested, especially when the organization is weak and control poor. The version that 'sticks' is largely dominated by the more powerful men, high caste farmers, and often headend farmers. Distribution of rotation shares and day and night turns therefore often constitute unequal systems in which some persons, notably of low caste, low status persons and widows, have to take their turn at inconvenient times, e.g., during the night or at the end of the planting cycle. Influential people often have the most convenient position within the rotation cycle. In conflicts about the division of water over and about distribution schedules, caste and wealth differences as well as political connections play a major role. They take place in communal and public arenas in which women do not usually want, or are expected to act.

Not all irrigation systems have official institutions in which decisions about the distribution, management and operation are made. Some small farmer managed systems have virtually no formal institutions. But where water management institutions have been established, they are invariably highly gendered. Outside agencies who build or rehabilitate irrigation systems require that users committees or associations be set up, with one or two female members. But the women who are appointed or selected are often taken from the wealthier high caste households; literacy or even Nepali citizenship³⁴ may be required. The life experience of these women is so different from that of female heads of households or low caste and low class women, that they cannot adequately represent these women in their irrigation system. Many women express the feeling that they would not be taken seriously by men; also, that it would be inappropriate for them to speak in public.³⁵ Whatever influence women exert on public decision making is predominantly done within the domestic sphere.

³⁴ Nepali citizenship is a politically highly sensitive issue in the southern and eastern regions of Nepal with open borders to India. Poor people, especially women, lack the financial and social resources necessary to obtain formal citizenship. Therefore, they often cannot be members of registered associations. See van der Schaaf in this volume.

³⁵ See Bruijns and Hijmans 1993. See also the contributions of Bajracharya and van der Schaaf in this volume. However, examples from the IWMI gender, poverty and water research in West Gandak and Andhi Khola suggest that some Water User Associations do have active female members who do speak up in public (personal communication Prabina Bajracharya, Amita Tuladhar and Shuku Pun).

Since rights to water are so strongly contingent on negotiating, decision making or struggle, women are in a weaker position than men to effectuate whatever water rights for irrigation. Women in particular have specific interests in the availability of water for domestic uses, for laundry, kitchen gardens, livestock and fodder production (see Jackson 1998: 35). Water for these purposes is often drawn from main or branch canals, but women are more or less fully excluded from decision making processes about the intake and the allocation of water between main or secondary canals. Discussions and decisions in such committees tend to focus on the distribution of water for irrigation. Other uses of water are by and large ignored. In practice this means that there is no water in the canals during the period in which irrigation water is not needed. Women have to use other water sources for domestic purposes during this time, which are often further away from their homes. Thus, exclusion of women from the decision making bodies has further reaching consequences than for irrigation only.³⁶

Maintenance

In order to maintain one's (household's) rights one must fulfil one's obligation to contribute to repair and maintenance of the irrigation system. The yearly maintenance work is done by labour and financial inputs of the water users themselves.³⁷ Participation in maintenance establishes and confirms rights to water.³⁸ Maintenance work is in principle considered a male domain, but there is considerable variation. The willingness and possibilities of women to contribute to the maintenance strongly depends on their economic status and their household composition and social network. Also the extent to which women, especially those who are temporarily or permanently head of their households, have to and actually do participate in order to maintain their household's rights, varies.

Most women are reluctant to work on the main and branch canals, especially in the larger systems, because they lack the time. However, women usually contribute to the maintenance of field channels. They also contribute to the total labour input by providing snacks and food - an activity which often goes unnoticed because it is seen as belonging to the domestic sphere rather than to canal maintenance (N. Pradhan 1989: 53).

In most systems, whenever a contribution is required in cash or labour, households headed by women contribute equally to households headed by men (N. Pradhan 1989:

³⁶ See van Koppen 1998b on inclusion and exclusion.

³⁷ The amount of work may be equally divided among the households of the users. Other ways to divide the work is on the basis of size of land or on the basis of water shares, or on the basis of one share for each hamlet. Financial inputs are usually raised by the users. If the government has made permanent structures, financial demands for maintenance are relatively low and labour is recruited from among the users. However, the costs of repair after floods or landslides may be far too high for the users. Nowadays, the government often pays at least a substantial part of the repairs.

³⁸ Because of that, persons who are not granted full rights usually may not participate in regular maintenance work, but they can be called upon for emergency repairs. Emergency repair does not establish rights to water.

52). When they are unable to participate in the repair and maintenance work, they often have to send male family members or hired and paid labourers. Women with a large family and good social relations can use more family labour. Better-off women who are able to produce a surplus can use this for hiring labourers. It seems that in some areas and under certain conditions, female heads of households do not participate in the maintenance at all, without losing their water rights.³⁹ Poor women both lack the necessary time and labour (Cleaver 1998: 60). As a result, they may lose their potential rights to irrigation water and as a consequence be unable to work their land.⁴⁰

As in the case of working and irrigating fields, there are differences in maintenance work according to the caste status of women and the location of the land. High caste women seem to do less maintenance work. N. Pradhan (1989) reports that in the hills women are prohibited from working in repair and maintenance activities of the larger canals. Such work is seen as 'men's' work. Often, women are described by men, but also by women, as being physically incapable of doing hard physical work.⁴¹ Women from tribal groups and even more from the untouchable *jats* have a larger recognized room for engaging in maintenance work, and therefore have better opportunities to maintain their rights to water, however small the amount of water may be.

Thus, in two main parts of the total complex of water rights, women are either totally excluded or severely limited. This goes for participation in negotiating and deciding on rules of distribution and in maintenance work. Moreover, because of the marriage and inheritance rules they usually have only derived rights to water at best. And these rights cannot be easily effectuated without strong close male relatives or a well-functioning *panipale* in place.⁴²

Conclusions

In this contribution we have outlined the major contingencies of gendered water rights in farmer managed irrigation systems in Nepal: The problem of converting categorical rights into concretised rights; the dependence of women's concretised water rights on land rights held by men; the problems women face in the actual appropriation of water, and their virtual exclusion from decision making processes over the distribution of irrigation water and over the use of water in irrigation canals and the organization of maintenance work. The latter aspect is particularly important given the highly dynamic and frequent changes in the water rights system due to changes in local political organization and the hydrological and technological structures of the irrigation

³⁹ Prabina Bajracharya (this volume) reports this from a hamlet in Ilam district that female headed households get exemption from labour contribution. See also van der Schaaf in this volume.

⁴⁰ See Pun in this volume.

⁴¹ See Bajracharya in this volume. She reports that, in contrast to what men say about their physical capabilities, women complain that they are not given the opportunity because they are not called to do maintenance work.

⁴² But see Meinzen-Dick and Zwartveen 1998: 193.

systems. Women thus generally have little opportunities to acquire concretised rights and have little influence on the specification of the amounts of water, while they find it very difficult to maintain their rights and defend whatever rights they have.

Our account also shows that women never function as holders of land and water rights just as 'women'. Their legal and social position on which they claim rights or enter into negotiations is always a compound of status elements. Some of these elements derive from their individual relationship to their father's and their husband's family. Some are general, derived from their caste and class status. In any negotiation or struggle over water, they enter as a Chhetri or low caste women; as a married women or as a widow; as a member or a head of a household; claiming water for a *khet* or *bari* field in the tail- or headend of the irrigation system; in the old or newly expanded command area of an irrigation system. Women thus are simultaneously constrained by all these positional characteristics.

This means that gender cannot easily be isolated from these other social differentials. Changes directed at gender relationships, for instance claims to gender equality, affect all other categories. Political calls for gender equality are often directed at the socially 'naked' individual, abstract from his or her other social and economic characteristics such as caste and class. But since gender does not exist in isolation, questioning the legitimacy of gender inequality is likely to affect also the legitimation of other inequalities. This may be even more the case because of all categorical inequalities, gender is perceived as the most 'natural' biological inequality, although caste inequality is also based upon physio-moral categorical differences.⁴³ In political and academic debates, there is a tendency to focus too strongly on gender and on individualized property rights in isolation, paying too little attention to the multiple status and relational elements in which female - and male - persons are enmeshed and to the multiple contingencies of water rights.⁴⁴ Providing women with the same rights as men would mean something different according to status, caste and wealth.

How does this relate to the statement of Zwarteveen (1997: 1346) that "the biggest impediment to establishing legitimacy for women's need for individual water rights is the astounding lack of recognition of women as irrigators and water users"? We doubt whether a greater visibility and recognition of women's important role in irrigated agriculture, and as irrigators, as such would lead to much change. It depends more on the legal and social organization and rules that structure the ways in which labour is controlled and attributed through status and contractual obligations. Male wage

⁴³ But unlike caste, gender, in Tilly's words (1998: 75), is an exterior category to the household or village organization that is 'matched' within the organisation of households and villages and becomes an interior category as well. As Tilly (1998: 77) points out, this reinforces inequality considerably.

⁴⁴ Even Zwarteveen (1997) in her excellent paper on gender and water rights in the context of irrigation, too generally speaks of 'women', and the attribution of water rights to 'men', and does not discuss the relation of water rights to land rights. While she convincingly points out that in relation to men, women are disadvantaged in that they a) have less water rights, and hardly ever on an individual basis, and b) even where women have such rights or act as trustees for their adolescent sons or absent husbands, she fails to come back to the land right-water right nexus and women's position in the household relationship complex.

labourers, share-croppers or bonded labourers perform most of the agricultural work and canal construction and maintenance, yet it is usually attributed to those persons or institutions who control this labour. Their activities and labour inputs in irrigation remain legally irrelevant in the sense that such labour does not lead to new property rights to land and water. Likewise, the work of women in irrigation is attributed to their husband or the household, but not to them personally. But we have to keep in mind that within the household, many men do not have individual rights to land or water either. Most agricultural land is inherited property which is not at free disposal to a man. Partitioning often takes place long after a man has established his own family. But even after partitioning has taken place, the land is not fully at his disposal. However, their labour is put on their own account and at least men have the expectation that after partition they become full title holders.

This also shows that providing women with individual rights to land and water would require far more than simply passing a law to allow women to have individual rights to water. Scepticism towards the presumed security that new formal rights allegedly bring is certainly warranted, given the experiences governments all over the world have had in using legal engineering as an instrument to change social and economic conditions.⁴⁵ The introduction of categorical rights for 'women' will not automatically lead to women acquiring concretised rights. Individual concretised rights to land and water, even if they could not easily be effectuated, may give women a better bargaining position in relation with their husbands and family-in-law. But to bring women into a more equal position with men would require changing the whole structure of categorical rights as well as a fundamental change of the conditions under which women can acquire and maintain over time concretised independent rights to land and water. In other words, it would require a rearrangement of the many-stranded household relations and their marital and matrimonial property relations. Given the gender inequalities in culture and religion, it would also require a fundamental change in the worldview of men and women.⁴⁶ Unless the whole land and water rights system would be changed, women would need land rights from which their water rights can be derived. Dissociating rights to irrigation water completely from rights to land would be very difficult in the existing systems. And if it would be possible it would bring only temporary relief at best. In order to maintain such rights to water through time and over the death of an individual woman, the inheritance system would have to be changed as well.

But given the particular ways in which rights to water are simultaneously but flexibly connected to land rights and socio-political decision making over water, even if changes in the private law sphere would occur, this would not provide a solution to another set of severe problems that have come out of the Nepalese material: it would not necessarily mean that they would get more influence in decision making processes

⁴⁵ See Cleaver (1998: 47, 55) for a critique on the assumption that formal rights, i.e., rights based on the national legal system, are "more robust and enduring than informal ones." For a more general discussion of legal engineering policies, see F. von Benda-Beckmann 1989, Rose 1998.

⁴⁶ See the conditions in Rupakot described by van der Schaaf in this volume.

in Water Users Associations. For this, other, cultural-religious and economic factors that shape women's actual positions and relationships would have to change too.

Finally, individual rights would not necessarily give women a better position in defending their water rights in case there is no husband around, due to death, sickness, or migration. We have seen that because of the specific characteristics of water, defending one's right needs to be done at a particular moment. If one is too late, the water will have gone. Women have more difficulties than men to do so, although there are also examples of women who freely steal water because they cannot be controlled by the very organization that excludes them from participation.⁴⁷ In their relations and interactions with men in other households and in community institutions other cultural-religious and economic (time and labour) constraints inhibit women from actively and if necessary aggressively defending their water turns when fields are irrigated, no matter what kind of right to water they hold.

Does this all mean that one should refrain from attempts to improve the situation of women regarding water rights? Certainly not, but the analysis calls for modesty in one's aspirations. Water rights relate to many widely diverse issues, in part of high economic and political sensitivity. The path to improvement is therefore complex, difficult and long.

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⁴⁷ See Meinzen-Dick and Zwartveen 1998: 183. It is not clear whether all women are able to steal without being punished or whether it is in particular high caste elite women who profit from this lack of control. The question is also why their husbands as head of their households are not punished as the person responsible for the household.

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