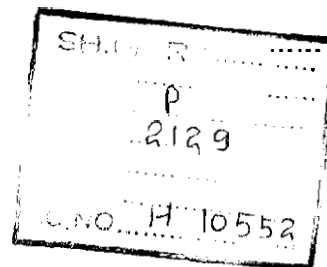
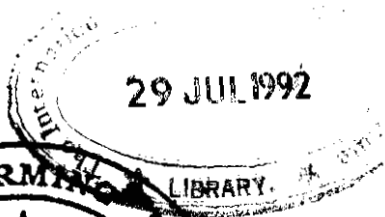


PROCEEDINGS OF SECOND ANNUAL WORKSHOP  
ON WOMEN IN FARMING SYSTEMS

Gender Participation . . . .

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## GENDER PARTICIPATION IN IRRIGATION SYSTEM ACTIVITIES IN THE HILLS OF NEPAL

Naresh C. Pradhan\*

### INTRODUCTION

Little gender-related irrigation research literature exists in Nepal. In a study on Nepalese women, women's time allocation patterns in various agriculture and domestic activities including irrigation are reported (Acharya and Bennett, 1981). Martin (1986) mentions cultural factors which limit women's participation in canal maintenance activities in a western Nepalese hill irrigation system. Pradhan (1987a) claims that in the Tarai Pithuwa irrigation system, a woman has taken leadership of a tail end branch canal of the main system. Pradhan (1987b) and Chambers (1987) have identified the extent of women's participation in night irrigation management. Sharma et al. (1984) found that irrigation ranked as the most pressing problem for female farmers while males ranked it sixth.

Several farmer-managed irrigation systems and development projects in the hills are examined to analyze the role that women play and the extent they participate in various stages of irrigation development and management. The range of employment opportunities provided to women in irrigation development projects are analyzed, and as well as in farming activities. Based on the experiences of women in communal systems, issues are explored affecting wider integration of women in irrigation development efforts.

### METHODOLOGY

This paper draws on the author's experience and observation in two irrigation research projects in Palpa, Parbat, and Sindhupalchok Districts, over a period of three years and two months. The author collected data through questionnaires, historical documents, and field observation. Information from 26 hill irrigation systems are used in the analysis of this study. The Water and Energy Commission Secretariat (WECS) of Nepal with financial support from Ford Foundation carried out improvement of 19 systems along the Indrawati River valley of Sindhupalchok District, (hereafter referred to as the WECS/FORD action research project). These systems previously had poor physical canal conditions due to their weak or non-existent organizations. Systems studied in

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Palpa and Parbat districts have very strong users' organizations with well-defined water allocation, distribution, resource mobilization, decisionmaking, and conflict management procedures.

## RESULTS AND DISCUSSION

### Women in the Planning Phase of Irrigation Improvements

Irrigation development projects are generally initiated and introduced by male village leaders since they are more aware of opportunities. However, the WECS/FORD action research project took a different approach, calling on beneficiaries to assemble a meeting with at least one member from each household to negotiate the standards for the project. These meetings are known as "First Dialogue" and "Second Dialogue." However, more than 90 percent of the representatives were male members. Female members attended the meeting only when a family did not have a male proxy. Most women could not attend the meetings because they were busy with other work. Some women reported that they were not called by village leaders because of the stereotype that females should not attend male gatherings. There was also the feeling that it is unnecessary to be represented by more than one member from a household. Most women who participated were silent observers, accepting whatever the male farmers decided. If the quorum of a meeting was not met, women were called to participate. Table 1 shows their weak role in decisionmaking in planning for system improvement.

During the planning period, the beneficiaries were supposed to supply a list of their landholdings. Some membership was based on head of household status—generally attributed to men. However, widows and female farmers with absent husbands were eligible for membership. Women compose less than five percent of the membership in the irrigation systems observed. Most of the women attending meetings were members of the system or representative of male association members. If a woman head of household had an adult son, she sent him as a proxy.

Throughout the irrigation systems of the WECS/FORD project area, it was observed that women played an insignificant role in setting the priorities for work, choosing appropriate design structures for canal improvement, and in rectifying designs during project implementation.

### Degree of Women's Participation During Construction

In the irrigation systems improved by the WECS/FORD project, less than ten percent of the total labor force was comprised of women. The reason for their low participation may have been governed by different factors. The project estimation and planning by technicians was based on work day requirements for men, not women. During project implementation, when there was not enough male labor, female laborers were allowed to work in canal construction activities. The patterns of male versus female work

are shown in the Table 2.

Problems Associated with Women's Participation. Household and social problems were associated with women's participation during the irrigation improvement Program. At the household level, problems included obtaining husband's permission to participate, the availability of male laborers, the heavy daily work burden of women, necessity of farm work, and poor communication. External or social factors are also a major problem hindering women's participation. This problem was observed of women of the Brahmin and Chhetri castes. Wage earning by females is considered a low status job done by the poor and scheduled castes. However, in well-organized systems in the western hills, the organization encourages women to do sand, gravel and stone collection for wages. In these cases social problems can be overcome by a good irrigation organization.

It is important to understand why women like to participate despite their work burden. A small sample of women who participated in canal construction, said they worked for the following reasons: wages for household, agricultural, and personal expenses; greater agricultural production with irrigation; ownership of the canal: reduced canal maintenance; improved water supply for cattle and washing clothes and dishes.

Project Equity to Women. In the WECS/FORD project, less than 12 percent of the women participated in irrigation system improvement programs and drew less than ten percent of the total cash wages. Their earnings were usually used for household consumption and payment of agricultural wage laborers, and for fertilizer. It was observed at the time of payment that some men frequently misused their earnings in gambling and drinking alcohol. For this reason, at the time of payment, some women tended to keep the wages of their husband and sons. Although, women have to get permission from their husbands and parents to work in the canal, they need not give their earnings to them, though a few share their earnings. Even if they do the same quantity and quality of work, sex differentiation in wages still prevails with unskilled men receiving NRs.22 per day, and unskilled women NRs. 18 for the same amount of labor.

Effect of project Participation on the Household. The involvement of women in irrigation project activities involves shifting resources and time away from other productive enterprises. The WECS/FORD project activities were scheduled to avoid conflict with farm operations. Nevertheless, some female project participants said that they could not weed wheat and maize, and their children's and own work load had increased, because of project activities.

Women have sometimes intervened in irrigation decision-making and improvement activities, and displayed a concern for the welfare of the community. In Bhanjayang Tar Ko Kulo (canal) the headreach people initially took much interest in the im-

provement of the head reach section of the canal, but they were not concerned with the improvement of the tail reach because of local politics. There was a critical section in the canal from which most of the water leaked, requiring improvement if the tail end people were to receive reliable water. Some women from the head reach said to the head reach male farmers that "if you males do not further improve the canal, we females will do the job." This embarrassed the male farmers, resulting in further improvement of the canal in the tail end. For this initiative, the women were honored at the completion of the improvement.

Although the WECS/FORD Project provided employment opportunities to a few women, it is expected that more employment will be provided to women of all households after the improvement. This is because improvements in the irrigation facility and its management can result in an annual increment of food production by about 698-1396 metric tons after 349 ha of sloping upland is brought into terraced irrigated land. Similarly from the existing irrigated land, yield increases are expected because the land received more water than previous years, and the crop was on time. This will create increased labor requirements. Landless women will also have new farm employment opportunities. Since women contribute a greater share to major farming operations, it is expected that household income may also increase.

The women in the project area are witnessing a decrease in problems with the canal, an increase in water quantity with higher reliability, and a subsequent increase in irrigated command area. In some systems women have requested that an agro-processing industry be installed in the improved canal. This would minimize the need for the women to carry grains a long distance, or eliminate the drudgeries of manually dehulling rice.

#### Women in Resource Mobilization

For canal improvement and maintenance, two types of resources are mobilized: cash or kind, and labor. In most systems, whenever a system required cash or kind, households headed by women contribute equitably with households headed by men. They are also sincere and punctual in paying their contribution. This type of contribution is on the basis of quantity of benefit received i.e., water allocation either on land area basis or on water share basis. Since women hold land and water assets less than ten percent (Table 3), their cash or kind contribution to a system is also in the same proportion. In irrigation systems in Palpa and Parbat district, absentee husbands send money to their wives to pay the canal organization.

Patterns of labor contribution in canal maintenance vary in different geographic conditions and are governed by various factors. Generally, women in the hills are prohibited from working in canal repair and maintenance activities. Canal maintenance activities require a collective effort, which is put forth primarily by the men. They feel free to joke and talk while working in the absence of women. This may be the reason they prefer not

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to let women work in canal maintenance activities.

Although, women are prohibited from the maintenance of the main canal, they are involved in the maintenance of field channels. When a canal requires routine or emergency maintenance, women heads of households send male proxies from the family, hire male labor, or send cash. However, initiators of and participants, in group system maintenance and individual canal cleaning were usually male, with the contribution of women for snacks and food preparation often going unnoticed. Those women who are the subordinates of men are sometimes involved in decisionmaking for a labor or cash contribution.

### Women in Water Distribution Activity

Even though hill women are seldom involved in resource mobilization activities, their participation is more pronounced in water distribution activities. However, their involvement varies by the existence of irrigation organization, type of crop being irrigated, timing of irrigation, and the supply of water from irrigation relative to the water demand by the crops.

In irrigation systems with good reliable organization, women are frequently involved in water distribution tasks. Since the committee members schedule water application time, women apply as per the schedule. Women are involved in irrigation during the night hours in Palpa and Parbat Districts. Since irrigated lands in the hills are near their residence, it has been observed that they irrigate between 4 am. and 10 pm. During other hours it becomes difficult and risky for them, and male relatives and neighbours help these women in irrigation water distribution.

Where there is no or poor irrigation organization, it becomes relatively difficult for women to apply water even during day time. However, it also depends upon the relative water supply. In Sindhupalchok systems when irrigation water supply is less than the demand by crops and there is poor irrigation organization, it is hard for the average women to apply water. At these times, conflict is also common among male farmers. Only women who can defend themselves can apply water to their crop in this situation. Others apply water after other male farmers finish their irrigation. However, when water supply is high, even children and women apply water to their crop at any time, but none of them irrigate during night hours.

### Women in Decisionmaking and Communication

Decisionmaking is another function of irrigation management. It is achieved by the management committee or by an organization of irrigators as a whole. Even in well-organized hill irrigation systems, the participation of women in the management committee is almost absent. In organization meetings women who attend only listen. Decisions are made by men, and women must follow these. Nevertheless, in the Pithuwa Chitwan irrigation system, a widow who owns a big share of land represented the main

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canal committee (Pradhan 1987a). In this system, when a woman is notified of irrigation system activity she communicated it to other women during water, fuel or fodder collection.

## Conclusion

Low prestige attached by society to wage employment of women is the major sociocultural factor restricting employment opportunities for women. However, introduction of a "piece wage" system with a concept of "equal pay for equal work" would allow equitable opportunities and distribution to rural people in development projects. When they were motivated to organize and were provided the opportunity to work, women performed quality skilled labor such as construction of a random rubble masonry work, and made RCC aqueducts. For unskilled work they were also efficient. However, their role in irrigation management is weak as is their role in improvement activities.

In irrigation development plans there is a dilemma between present policy which designates that women be included, and actual implementation which does not incorporate women in planning and design, and sometimes discriminates against them as with wages. Planners and practitioners must find ways to improve the quality of life for women so that inequities are not further increased by adding more responsibility to their already overburdened lives and undervalued status.

## REFERENCES

- Acharya, Meena and Lynn Bennett. 1981. Rural Women of Nepal: An Aggregate Analysis and Summary of Eight Village Studies. Vol. II, Part 9, The Status of Women in Nepal. Kathmandu, Nepal: Centre for Economic Development and Administration, Tribhuvan University.
- Chambers, Robert. 1986. "Canal Irrigation at Night," In Irrigation and Drainage Systems. Dordrecht, Netherlands: Nijhoff Pubs.
- Martin, E.D. 1986. "Resource Mobilization, Water Allocation, and Farmer Organization in Hill Irrigation Systems in Nepal." Unpublished Ph.D. dissertation. Ithaca, N.Y.: Cornell University.
- Pradhan, Naresh Chand. 1987a, "Improving Irrigation System Management by Farmer to Farmer Training Organized by Department of Irrigation." In Conduct Impact of Farmers Training. Kathmandu, Nepal: Irrigation Management Center.
- ..... 1987b, "Canal Irrigation at Night in Western Hill Irrigation Systems of Nepal." Unpublished report.
- Pradhan, Prachandra. 1988. "Increasing Agricultural Production in Nepal: Role of Low-cost Irrigation Development Through Farmer Participation." Kathmandu, Nepal: International Irrigation Management Institute.



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Sharma, Padma, L. Zivetz, B. Sharma, S. Anderson. 1984. "Planning Extension for Farm Women." Kathmandu, Nepal.

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 Table 1. Participation in Planning of Irrigation by Gender  
 1988/89, WECS/FORD Project Area, Sindhupalchok

System name	Degree of participation in irrigation system planning by gender					
	First dialogue		Second dialogue		Design rectification	
	Male	Female	Male	Female	Male	Female
CHHAHARE KHOLA KO KULO	80	9	81	14	29	0
TALLO JHAKRI KHET KO KULO	37	0	49	0	31	0
CHHOLANG KHET KO	41	0	43	0	20	0
SOTI BAGAR KO KULO	49	3	41	9	19	0
DOVANESWARA KO KULO	22	2	21	0	12	0
GHATTA MUHAN KO	49	0	58	3	43	1
MAGAR KO KULO	34	0	176	5	11	0
SIRAN KO KULO (TAR)	33	2	39	1	15	0
MAJH KO KULO (TAR)	34	0	82	3	27	0
BHANJYANG TAR KO KULO	87	1	51	0	0	0
CHAP BOT KO KULO	61	3	49	1	0	0
TALLO CHAPLETI KO KULO	72	6	64	9	7	1
BAGMARA KO KULO	14	1	11	2	0	0
SIRAN KO KULO (BAGWA)	98	7	73	9	7	0
MAJH KO KULO (BAGWA)	74	14	71	9	0	0
NAYA DHARA KO KULO	141	15	0	0	0	0
BESI KULO	201	16	0	0	0	0
SUBEDAR/DHAP KULO	70	0	0	0	0	0
<b>Total</b>	<b>1203</b>	<b>79</b>	<b>921</b>	<b>65</b>	<b>221</b>	<b>2</b>

Note: First dialogue refers to a meeting to assess the users' initiative to introduce an irrigation project. Second dialogue refers to a meeting to reconfirm users' desire to introduce irrigation project. Canal improvement works are prioritized, and irrigation designs are chosen at this phase. Design rectification refers to a change of some structures proposed during second dialogue.

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**Table 2. Patterns of Work by Gender, WECS/FORD Project, 1988-89**

<b>Phase and activity</b>	<b>Male</b>	<b>Female</b>
Preconstruction Forming management committee	Male members dominated committee formed to implement project and prepare the bylaws, Male members dominated the meetings	Women attended general meetings as proxies of their spouses. In two systems, two women represent canal committee.
Designing system facilities undertaking surveys, field inspection	Male farmers involved in system planning activities	A few female farmers joined the sessions to discuss system for final design.
Construction Phase Preparation for farmer's participation in construction,	Male leaders comprised the majority of those who attended meetings with project officials to discuss construction agreements.	A few female farmers and wives of male members joined discussion concerning system construction.
Construction	Most of the laborers were male.	Less than <b>12%</b> of total labor force was female.  Women did additional household activities left by males.  Women prepare breakfast and take it to the construction site.
Monitoring costs, materials and farmers' contributions in the project.	The management committee did these functions. Farmers' contribution came from male members and male representatives of female members.	Female have weak role in this case. They sent male proxies when the irrigation organization asked them to contribute labor for the project.

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Table 3. Household Head Type and Percent of Land and Water Share by Sex in Some Hill Irrigation Systems of Nepal

System name and address (district)	House-		F (%)	System area (ha)	Total water shares (NRs.)	Female water share (%)
	hold head					
	M	F				
SIRAN KO KULO, DHAP TAR (SIN)	54	6	10	24	0	0
ARGALI MAILI KULO, ARGALI (PAL)	72	6	8	26	0	0
MAJH KO KULO, DHAP TAR (SIN)	133	11	7	87	0	0
ARGALI RAJ KULO, ARGALI (PAL)	158	12	7	102	0	0
PHALEBAS TALLO KULO, PHALEBAS (PAL)	330	25	7	135	13982	4
CHAP BOT KO KULO, BAHUNEPATI (SIN)	53	4	7	17	0	0
ARGALI KANCHI KULO, ARGALI (PAL)	28	2	7	11	0	0
CHHERLUNG TALLO KULO, CHHERLUNG (PAL)	58	4	6	17	5500	3
JHAKRI KHET KO KULO, DUBACHUR-9 (SIN)	58	4	6	31	0	0
GHATTA MUHAN KO KULO, DHAP TAR (SIN)	76	5	6	33	0	0
CHHOLANG KHET KO KULO (SIN)	61	4	6	37	0	0
ARGALI SAILI KULO, ARGALI (PAL)	51	3	5	15	0	0
MAGAR KO KULO, BHOTE NAMLANG (SIN)	173	10	5	143	0	0
CHHAHARE KHOLA KO KULO, BARUWA (SIN)	150	8	5	163	0	0
SUDEBAR/DHAP KULO, DHAP (SIN)	120	5	4	65	0	0
SIRAN KO KULO, BAGUWA (SIN)	85	3	3	37	0	0
MAJH KO KULO, BAGUWA (SIN)	122	4	3	33	0	0
BHANJYANG TAR KULO, BHOTECHAUR (SIN)	137	4	3	35	0	0
SOTI BAGAR KO KULO, DHAP TAR (SIN)	72	2	3	30	0	0
TALLO CHAPLETI KULO, BAGUWA (SIN)	78	2	2	23	0	0
DOVANESWARA KO KULO, DHAP TAR (SIN)	11	0	0	12	0	0
CHHERLUNG THULO KULO, CHHERLUNG (PAL)	125	0	0	35	6400	0
BAGMARA KO KULO, SANJELTAR (SIN)	16	0	0	9	0	0
ARTUNGA KULO, ARTUNGA (PAL)	35	0	0	11	0	0

Total 2249 103 4 1330 25882

Districts: SIN=Sindhupalchok; PAL=Palpa; PAR=Parvat.

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