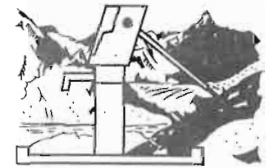




## WATER, ENVIRONMENT AND MANAGEMENT

### Women and water: equity and gender

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Women are the main backbone of Nepal's mountain economy. Women have traditionally managed local resources to sustain households, livestock, forest resource, land, water etc around which their day to day lives revolve. As active participants in natural resources management, Nepalese women have survived the demands made upon them by dwindling resources.

Overuse and reckless exploitation of available resources has also brought upon women additional tasks resulting from their productive and reproductive roles in the absence of men, who migrate to the middle hills or to the plains in the Terai or to India, in search of employment opportunities.

In Nepal the incidence of female headed households has increased, and though exact figures are not available, increasing trends in out-migration of males from the hills to other regions lends ample evidence of women's increasing workloads and responsibilities in sustaining the environment.

Amongst the myriad of responsibilities as natural resource managers, women's time spent on producing family sustenance involves drudgery related work in which water management is a contributing factor. Responsibilities for reproductive work (such as regular household duties, caring for the old and young, cooking, cleaning etc) as well as work outside the household, (such as livestock raising, farm work, etc) places a heavy toll of continuous hard labour involving water carrying and use which imposes upon their health, energy and time.

As human water transporters of spending between four to seven hours a day in water collection, carrying water on their heads or backs in heavy pots and buckets, women and girl children are easily exposed to injuries and are vulnerable to spinal problems and to water borne diseases.

Traditionally, women in Nepal, whether urban or rural, have always been basic managers of water systems. Household responsibilities are primarily female responsibilities which cut across caste, ethnicity, religion, economic strata and social conditions. Women and girls are found in all regions of Nepal to be deeply entrenched in water related activities that revolve around daily household activities, and during festivities and religious events.

Seasonal fluctuations affect supply of water for households and non-household purposes. So that decisions about where to go for water collection at particular times of the year, how often and how to collect at a time, how water will be stored, used and re-used etc are important decisions, to be made by women.

The urban working woman, irrespective of her professional or economic status, still remains a wife, mother or daughter. These familial roles ascribe upon her certain duties and responsibilities in which daily early morning water fetching, either from sources such as communal taps or private household taps, is a routine job. In urban households women, particularly daughters and daughters-in-laws, are the ones who carry water.

Based on a study conducted in Kakani area, within the vicinity of Kathmandu, it is estimated that the mean daily requirement of water per household is approximately 44 litres. The mean time required to fetch one *gagro* (a pitcher made of clay aluminium or brass) is 35-48 minutes depending on the topography of the area and type of water source. It has been found that quite often if travelling time to collect water is high women resort to stream water for drinking. During the monsoons, due to slippery roads, muddy paths and parasitic bites, women also use stream water for drinking.

Mismanagement and reckless exploitation of drinking water supply is also quite common in both rural and urban areas. For example, the media reported sometime last year about the unscrupulous practice of cutting off pipe connections and diverting drinking water away for washing of newly manufactured Tibetan carpets. Most carpet units function through the informal system within the unorganised sector. So imposition of penalties or fines is difficult. Carpet washing is one of the final processes in carpet manufacturing. Mechanical washing plants are not very common in Kathmandu. Most washing is done by hand, so that "stealing" drinking water from pipes for industrial purposes may often be a practice that goes unreported. Such competitive demands on drinking water require proper legal action.

In dry seasons, when water is scarce, people in the villages take undue advantage of water reservoirs, made specially for storing tap water. People often enter the tank to drain water which contaminates the very water source! Some studies have also indicated that at times people cut water pipes and then place clay, stone and glass pieces, in order to control its distribution.

When taps run dry or when water is scarce, it is women who bear the brunt of the difficulties. But even when the quantity of water is not much of a problem, contamination of water, after entering the supply system, through leakages and infiltration pollutes drinking water. In rural areas, contamination by infiltration is less and water at the supply source is safer. However, due to poor handling practices and bad storage facilities water gets contaminated to dangerous levels before it is used for drinking.

Installation of taps is a problematic issue in the village. Suspicious about conspiracies between vested groups, eg powerful village elites and technicians, are constant irritants.

Where water taps overflow with water, households that are further away from tap stands than their neighbours often purposely boycott even passing by the tap. They rather resort to walking longer distances to the traditional stone taps to fetch water. Why? Because honour in the village is a prized asset. Those who resist using taps of neighbours feel very strongly about inequity in proximity and access and would rather boycott than cooperate.

There are also problems about water sources and tapping of these sources. In some villages, especially in the hills, people in the lower elevations feel those in the uplands, with close access to the water source, have cheated them by tapping the major share.

Caste conflicts also prevail. According to four Magar families in a Brahmin dominated village. "Those were economically well off and able to fight got water. We all helped with voluntary labour and got nothing. There was a canal close by our houses and we had always used this as our source of water. With the laying of pipes, "they" diverted this water. Our buffaloes died without water. The influential people let their taps overflow with water to feed their fields because they have excess of water. We don't get even to drink water."

There is no importance given to women's voices and the comparative advantage of articulate technicians place them in proximity to the influential men or families in the village. Technicians thus do not communicate with the economically and socially disadvantaged in the village.

There are numerous instances of indigenous mechanisms for pooling resources amongst village groups for water maintenance and repair. These efforts are scattered and relatively unknown. Amongst the Gurungs in the hills, for example, Mother groups or "Ama tolis" are traditional, participatory groups of women (married or unmarried) who organize for community development. Such informal structures have never been used for project based water management practices in Nepal.

Village Maintenance Workers (VMW) are all males, in all the villages surveyed. This indicates how women are not looked up as potential maintenance workers, but as mere beneficiaries alone.

Vertical structures within the national Ministries and Departments, eg Drinking Water and Sanitation, Department of Government and technically dominated structures, dominate community particular.

It will not be appropriate to say that women's roles in Nepal, regarding water usage and supply is changing or has changed for the better. Women's roles have basically remained unchanged, particularly in their water related activities. Women still assume responsibilities for water fetching, cooking, food

processing, cleaning, kitchen gardening etc in which water is involved.

Rural women's work extends beyond the above mentioned activities to extra household duties on the farm and in livestock management, both of which make heavy demands on rational use of water and storage. The vulnerability to seasonal fluctuations is even greater, in the absence of any planned water supply source.

Environmental management is a critical factor in Nepal's water supply. Water resources are affected by both physical and human interactions. Deforestation, soil erosion, over-population, pollution and urbanisation in Nepal are gradually imposing new challenges on the environment, and subsequently upon women.

Receding water sources, deterioration of natural water supply systems, water pollution at source and in distribution systems, lack of proper repair and maintenance are factors that compel women and female children to spend an ever increasing amount of time looking for and carrying safe water. This not only increases hard labour, perpetuates drudgery, causes health hazards and limits time to be spent on other equally pressing duties, but also interferes with schooling and income generating work of women and children, in both rural and urban areas of Nepal.

Households in urban Kathmandu are spending much of their family income on water which is purchased from the government water supply system. Water in the urban areas has become a scarce commodity. Here just the concern to keep a tap running to ensure the household of water is becoming a worrisome concern. Water is purchased at approximately Rs800 a truck, which holds approximately 2000 litres of water. The quality of the water is yet of secondary concern, given the fact that water supply in itself is so critical.

### Differential Perceptions

Traditional beliefs influence people's attitudes to water sources. For example, in individual urban households in Kathmandu it is a common practice that water for drinking purposes, which is termed as "chokho" or pure water, must be fetched from the source considered to be authentically "unpolluted", ie the main tap which is generally installed in the courtyard, or the communal tap. This "purity of water" concept indicates the basic concern for clean water. Despite change in women's outlook and knowledge regarding water pollution, the irrelevance of the water source (whether outside the home, in the courtyard, or inside the house in the kitchen) traditional practices are still pre-occupied with "pure" water. Such practices also cause undue wastage of water. For water kept overnight is almost always thrown away as "contaminated" and pots are refilled again.

Traditional perceptions amongst women in rural areas lend insight into their use of water. For example kuwa water is considered to be pure or more fit for drinking than tap water. Local villagers feel a sense of responsibility in keeping their village clean. A clean vessel is used to drain water from a well, and care is

taken to prevent spilt water from entering. The close link between men and women as "external assistance", or "project taps" and non-obligatory. The deterioration of water quality, water supply and maintenance, apart from other causes, are mostly due to the reasons given above.

The notion of "polluted" water is very specific to cultural beliefs and practices. For example, during my field exercise it was observed that there is male resistance to the flow of water from community tapstands into agricultural fields for irrigation purposes. The belief that women immediately after childbirth are "unclean" or that tapstands being used for washing newly born babies "unclean" clothes etc are polluted, is still very prevalent. Such polluted water is believed to cause damage to crops. Yet one is familiar with the use of "night soil", which is used as organic manure in Nepal, as fertilizer.

In most instances, one finds excessive wastage of water because in most sites taps have been either stolen or are in need of repair. Non-caring attitudes towards "government taps" is very strong. "Project taps" fare better and taps built through villagers own initiatives are well maintained. Government taps are those put up by the Department of Drinking Water and Sanitation of the Government. "Project taps" refer to those that have been installed through direct donor intervention, which have also failed to provide space to women in water projects. Women's ignorance or lack of awareness about maintenance and repair, total exclusion of women in pre-project decisions about site selection and the basis for these decisions is very apparent. Women complain that while they are mobilized for voluntary labour by the powerful village people on the grounds that access to water will be based on the mutual good of the village, the benefits ultimately are siphoned off to powerful families with political connections. Women are very aware of such malpractices. Their marginalization from decision making, right from pre-planning, implementation to monitoring, renders them helpless.

### Sanitation

Water supply cannot be treated as separate from sanitation which duly impacts public health. Sanitation in Nepal seems to be looked upon as being nobody's problem, despite the fact that sanitation programmes have been going on in Nepal since the last 20 years. As a low priority area, these programmes have been based on ad hocism with no clear policy for implementation.

The deplorable condition of sanitation is amply demonstrated in Kathmandu Valley. Known to have the worst sanitation conditions in Asia, diarrhoeal diseases cause 44% of infant and child deaths annually in Nepal.

According to UNICEF (1991) of every 1000 children born in Nepal, seven will die on their first day of life, an additional 16 by the end of the first week, another 30 by the end of the first month and another 54 by the end of the first year.

According to the same source, out of 70,000 deaths that occur amongst children each year, 192 deaths a day are caused by factors that are either preventable or manageable. Though no reliable age specific data on sickness patterns are available, infectious and parasitic diseases are reported as number one cause of health post attendance and number two cause of hospital attendance (UNICEF 1991). Food security, cultural practices that influence inter-household food and water distribution, inadequate health care, unhealthy environmental and personal hygiene contribute to poor health and malnutrition in Nepal. The increase in gastroenteritis epidemics, and the recent cholera outbreak in the summer of 1990 indicate the severity of the problem.

Though poor sanitary conditions are exacerbated by inadequate water supply facilities in rural areas, in urban areas the situation is worse. The major cities of Kathmandu Valley suffer from extremely poor sewage systems. The close proximity of sewage pipes with drinking water supply pipes raises a new dimension to the question of an inadequate supply and the pipes run dry for most of the day. Water runs in the pipes for only 2-4 hours daily. This causes vacuums and the sucking of sewage due to faulty infrastructural system. Leaks and seepage are common. Crowding of people into the cities, random construction and building works, unplanned housing and public works, lack of community development and community benefits have almost led to chaotic unsafe and unhealthy conditions of life in the inner urban market centres of Kathmandu Valley.

For diarrhoea control and prevention of dehydration, ORT has been promoting since the 1970s. The base ingredient in its formula consists of glucose - electrolyte and water. Attention must be given to ensure that water being used is clear, especially for children with chronic diarrhoea.

Case studies also indicate that increase of water supply does not necessarily ensure equal or easy access. Both distributional and management problems cause disputes and lead to competition in the use of tap water for collection. In Kakani, for example, drinking water pipes have often either been cut or holes bored into pipes for easy and speedy access. Power struggles for tap water are not uncommon. Water management is accounted for as being the cause of maximum community dispute in urban and rural areas. Under social and cultural constraints, women's participation in water management is considered to be with the "private show" though in some cases sexual harassment of women has come to light, which has gone unreported. People are afraid to talk about it openly.

Based on a recent evaluation of a Drinking Water Supply and Sanitation Project in Syangja district in Western Nepal, the following constraints limit women's participation:

\* Conflicting demands on time force women to trade off voluntary or community-oriented work in sanitation, water and energy projects, to spend more time on domestic or income earning opportunities.

- \* Young women are mostly in their reproductive years and already have child-care responsibilities which limits their participation. Older women may not have the strength to take on hard labour, having involved in physical labour in their younger years.
- \* Men and women have differing levels of skill of expertise in water, sanitation and energy related activities due to traditionally separate roles. The lack of any one of them can bring imbalance in the system.
- \* In management of water systems the relative participation of women is less. This is partly due to cultural norms which assume that women's comprehension of technology, maintenance and repair is less. The men-machine-technology assumption still holds strong.
- \* Power structures in village areas.

### **Basic Strategies for Women's Involvement**

- \* A clear cut policy: in which water supply and sanitation is considered crucial to the quality of life which includes individual and community health, safe disposal of excreta, waste water, industrial waste etc.
- \* Institutionalization of the concept of women's role in water supply programmes: This can be done by establishing a women's co-ordinating unit within the Ministry of Housing and Physical Planning and ensuring co-ordination between this and other agencies such as Water and Energy Commission, Department of Water Supply and Sewerage, NGOs and informal groups at village level.
- \* Strengthen women's involvement in user's committee: Only ensuring that at least two women form part of the user committee will not be enough. It will be necessary to ensure that women's voices are heard and given due attention.
- \* Training programmes on leadership awareness, self-worth and communication skills for women need to be integrated into water and sanitation programmes. Technical training alone will not be effective unless the social structures are tackled.
- \* Incentive schemes: This can be done as a means of motivation wherein women should be sent on observation visits and exchange programmes to other villages, project sites and meetings in the country.
- \* Environmental education should be introduced through awareness programmes for men, women and children. This should provide a holistic approach to the environment in which water is not looked upon as a single resource, but interlinked with other natural resources eg forestry. Awareness of water sources drying up due to deforestation is one example.