

Participatory Water Governance through Gender Sensitisation in the Indian Context

Prachi Khanna and B.S. Bisht

National Institute of Administrative Research, LBSNAA, Mussoorie

15-08-2013

Abstract

Equity in water, through gender-sensitization of developmental projects in the sector, is now recognised as an international agenda, owing to the commitments made in the Johannesburg Plan of Implementation, and declaration of 'Water for Health' as a human right. However, governments in developing countries have been found to be limited by social fabric existing at the community level, strongly held together by long standing traditions and social structures. Efforts that penetrate into this structure to built opportunities for a re-allocation of power amongst different groups of people are required. Participatory appraisal of projects, inclusive of women, is a key for identification of appropriate entry points for achieving the above objective in water sector. Several intra-gender differences however, impede success of programmes that consider women as a homogenous group. The study discusses issues and concerns with respect to effective participation of women in governance of water projects, and provides case studies/ examples to illustrate the practical implications of success(es) and failures(es) to engage women for decision-making.

Keywords: *Participatory governance, Gender-sensitization, Water policy and governance*

I. Introduction

I.a. Water Governance in India

Water is a key developmental issue for India, being directly linked to health and sanitation. In India, water sector projects have conventionally focussed on large-scale irrigation projects, often neglecting women's priority for sources water for drinking and other domestic purposes. In India, equity in the water sector is often found to be lacking on account of differential power distribution amongst genders and castes/ groups. Traditional water governance in India has excluded 'dalits' and women from consultation (Joshi and Fawcett, 2006)). These issues have been further discussed in section III.b. However, policy makers are now increasingly recognising the importance of gender

considerations in designing water development initiatives. Decentralized governance is now regarded as the key that can help resolve the equity issue in the water sector. However, a study by Kulkarni, 2011 concludes that local social institutions, norms, tradition and existing legal-political arrangements are obstructing the success that decentralization could potentially bring in the water sector in India [1]. Additionally, tradition and inheritance laws hamper government initiatives intended to empower women through participation [2]. Recent inclusion of women in water projects has been criticised to solely have an economic motive by transferring activities to women volunteering for the cause [3]. An 'empowering participatory approach' though has been found to be successful in India [4]. For India, a major hindrance for adopting a gender approach could be the lack of gender-segregated data. This would limit quantitative demonstration of the existing gender gap, and the impacts of the initiatives in reducing this gap during the monitoring phase.

II. Methodology

A desk review has been conducted to compile and present the current lags in the institutional and policy structures with regards to engaging women in water sector projects in India. Additionally, a review of case studies/ examples has been undertaken and used in the article to demonstrate the implications of the existing threats and opportunities at the community level.

III. Results and Findings

III.a. Gender Linkages to Water Governance

➤ *Women as Domestic Water Managers*

In many societies, women are not only users, but also collectors and managers of the household water use. Women use water for cooking, washing,

livestock, health and sanitation. Being the domestic managers, collection of water for domestic purposes is regarded as women's responsibility [2, 5]. Often, women and girls have to travel long distances to collect water. Thus, any change in the quality or quantity of water that renders it un-potable or inadequate is bound to affect women foremost [5]. Thus, access to clean and reliable water resource is of utmost importance to them. Many times, women's role also extends beyond the domestic terrain, whereby they are involved as farmers of irrigated crops. In such cases, they assume the role of managers of the 'productive' water as well. This is an important role since at least half of the world food is grown by women farmers [2].

Generally, speaking, the roles and responsibilities for water resource management are distinctly divided between men and women in all developing nations. While women are involved in domestic

water management [2], men are inconsiderate towards women's hardships for domestic water management and are most often mainly concerned with water for irrigation and livestock management [5]. This distinction is also reflected in the conventional development programmes related to water that are focussed at meeting irrigation water requirement, and disregard water use for domestic purposes. This has been explained in further detail in section III.b.

Since women have greater responsibility for water management on a day-to-day basis, particularly in developing countries, they are much more impacted than men by the lack of access to clean water resources. Further, since women are dependent upon natural resources, it is a matter of practical, cultural and ethical interest to them to conserve natural resources [2]. Clearly, they bear the potential of influencing future attitudes towards water resource conservation [2].

Evolution of Women in Water Governance – International Developments

Equality and Equity in water is an international agenda as the UN charter's Preamble endorses the equal rights of men and women. However, women often have unequal access to water [2]. Despite women being traditionally involved in water management activities since long, it was only in the 1970s that for the first time an official attempt to acknowledge and pursue women's role in natural resources management policies was made through the "Women in Development" approach. In the UN Water Conference in 1977, women's role as water managers was recognised. Thereafter, in 1980s, with greater recognition being given to community participation approach, women role in water management plans and policies was further acknowledged [6]. In the Dublin Conference (1992) women's role in practical day-to-day supply, management and use of water supply and sanitation was recognized, and emphasis was laid on involving women in all stages of water management [2]. This approach was carried forward unto the Rio Conference, whereby Agenda 21 propagated an increase in women's presence in decision-making positions. UNICEF, since 1994 too has adopted the "Women's Equity and Empowerment framework" to promote gender equality [6]. In the Johannesburg Plan of Implementation of the 2002 World Summit on Sustainable Development governments committed to gender-sensitization of development projects in water and sanitation [7].

Water as a human right: *In 1993, the World Conference on Human Rights recognised the right to economic, social, sustainable and equitable development as a human right. Further, Article 2, the Declaration of Human Rights states that each person has the right to attain a minimum standard of quality of life. Together, these two imply protection of access water resources for the traditionally less privileged. Water for Health was clearly declared a Human Right by the World Health Organization on December 4, 2002 – which can be construed as the right of women for access to clean and safe drinking water [2].*

➤ *Water Access Linkages to Women's Development*

According to an estimate, in many developing countries, women walk for an average of about 6 kilometers each day to collect water (UNFPA 2002) [5]. This consumes a considerable amount of their time [5] and energy [6]; while also adding on to their already burdened daily workloads. Such strenuous water-fetching activities not only has an adverse effect on their health [6], but lack of access to freshwater also impacts health of on children and other family members; which they alone have to care for in sickness [2].

Since a substantial amount of women's time is consumed in water fetching activities, it prohibits other economically productive activities on their part [6]. The opportunity cost of the time spent thereof, is high, being potentially utilized for including productive and resilience building activities to reinforce livelihood [5]. It is well documented that young girls often have to drop out of school in order to assist other women in family for water collection [5]. Thus, water access has clear and direct linkages to girls' education – thus acting as an impediment to the various opportunities that could open up to them through formal education. Walking down to far-off

places exposes young girls to violent activities against women [5]. Thus, though water collection activities do cultivate solidity in social structure by allowing women to come together and communicate to other women outside their household [5], it also presents a threat to their health, dignity and development.

➤ *Role of women in Water Governance*

Despite being technologically illiterate, with their traditional role as water managers, women have developed knowledge, wisdom and skills related to fragile ecosystem management and sustainable water [2] use including management and protection of water resources [7]; assessing quality, reliability and seasonal variation of a local water resource, its storage [2], crop production, soils as well as local biodiversity [5]. They have a crucial role to play in domestic and irrigation water sector and possess knowledge and skills for minimizing waste and reducing use and recycling of resources [2]. Unfortunately, they are conventionally included in water management programmes as major “beneficiaries” and not as “actors” that could contribute to successful planning and implementation for water resource projects [6] with their knowledge base. This may be because their role in WRM is more informal and often official economic statistics underestimate their role in water and agricultural sector; and hence it is rarely attempted to more formally engage them formulating water management strategies through political, legal, and administrative or governance channels [2]. Community governance structures continue to disregard women as ‘family labourers’, not acknowledging their contribution as domestic and farm managers with demonstrated decision-making abilities [5]. Such exclusion implies that women’s preference in the kind or location of services they receive is not captured in the developmental plans [5]. Where women do participate in water governance, their role is largely ‘secondary’. Efforts are thus required to give women more prominent roles in water governance [8].

➤ *Women in Water Governance – the changing paradigm*

Inadequate participation by women in plans and policies means that the services and resources provided by developmental plans remain poorly accessible to them [5], and the intended benefits do not accrue to the all women beneficiaries, as envisaged. Women, being the main users of water, must be involved in the research, technology and policy aspects of decision-making so as to pursue principles of democratic governance [2]. Internationally, exclusion of women from decision-making in water projects is being recognised as a major obstacle to the success of the projects in the sector as quoted by a 1989 World Bank publication [2]. A study in 88 communities in 15 countries and a desk study of 121 World Bank-financed projects show that women’s involvement is the key for effective community water projects [4]. Moreover, it is not only practical, but also ethical that the needs of both men and women are captured equitably in the designing, planning, localization, management phase of water-related programmes [2].

Thus, there is a strong need to gender-sensitize developmental plans [5] to ensure the benefits are accrued as intended. Gender sensitization implies that plans should consider and address the varying needs of both men and women; and not any one alone [2, 9]. It does however, entail understanding of how gender power relations work in a particular sector [10], and amending action plans to ensure equity in service across genders, despite the prevailing power relations at domestic/ community levels. More specifically, in the context of water, it considers that men, with greater ‘social’ power, are in a beneficial position than women to be able to not only access, but also assert their demand and rights to water resources [10]. Such a strategy shall ensure that women’s concerns are not only addressed but also become part of the solution [11]. The involvement of both men and women at an early stage in project designing will not only give them an opportunity to influence and participate in the project, but will also facilitate a more effective drawing of benefits from development [2]. Internationally, policy makers are echoing the demand to include women at all levels in the decision-making process, and adopt a gender perspective to address the disproportional access to resources between men and women. Most water conferences too have called for the incorporation of

a gender perspective into water policies and programmes [4]. Gender analysis is intended to assist in understanding the various users, usages and use-patterns of water (who, what, when) along with the process involved in allocating a certain resource for a certain use (how and why?).

III.b. What Ails Women in Water Governance in India?

Citing decentralization as an effective way of water governance, initiatives have been put in place to facilitate decentralisation of control over water resources. Community-led management activities are being promoted and supported with the objective of achieving sustainability and equity in access to & sharing of water resources. However, the consequent formation/ revival of pani-panchayats, WUAs, pani-samitis etc have most often failed to achieve the desired results [1] with respect to equitable distribution on account of socio-cultural-legal arrangements.

An observation by SEWA reveals that particularly, for women, “sustaining the ‘pani-samitis’ in terms of its effectiveness is a challenge for women in the face of a patriarchal society and gender-insensitive state” [8]. Most irrigation programmes are based on the “single-use” framework, targeting agricultural water access [5]. Priority to relieve women of the hardships of collecting domestic water is hardly ever acknowledged.

Furthermore, even in agriculture, women's role is under-estimated in official statistics due to the legal rights to land being with the male members of the family [7]. For large irrigation programmes, water rights are allocated based on land tenure arrangements. Since land rights follow a patriarchal system, as in the households, women are not given access rights to irrigation projects, despite the labour they put-in on fields [9]. Lack of formal rights to land also renders them in-eligible for gaining memberships of water users associations (WUAs) [7]. They therefore, do not get the opportunity to participate in the consultations/ meetings of such projects /organisations [9]. As a result, most of the agriculture and water initiatives fail to take into account women's concerns about the multiple uses of water [5]. Consequently, the functioning of these

WUAs is often apathetic towards women's needs. In some, irrigation systems, it is illegal to use water for domestic purposes, inhibiting women's access to water. In fact, some irrigation projects even have a negative impact on domestic water availability [5] – domestic water user and irrigation water use being competitive in nature.

Where women are entitled to participate in consultations and meetings, several factors inhibit effective uptake of women's issues with respect to water. On several instances, women voluntarily refrain from attending such meetings. Information asymmetry on irrigation projects between men and women can be cited as a major cause of lack of participation by women. Women are assumed to be communicated through their husbands, while male members of the household keep information to themselves thus resulting in “gender-segregated” information patterns [5, 9]. Due to this lack of information women are either not aware of the consultation event, or are unaware of the issues to be discussed or, in yet some cases, simply lack the confidence to present their opinion. As a result, they do not see major role for themselves in such meetings [5]. Low literacy level, and lack of formal education and skill [1] development also holds back the self confidence to participate in these meetings.

Household rules regarding women's mobility may also prevent their participation in water organisation meetings [9]. Also, heavy workloads combined with unsuitable timings and location may act as an impediment to their preference to attend these meetings [12]. Even when women are physically present in public consultations, cultural factors,

Why organise women?

Collective action enables women to withstand societal, state and household pressures and conflicts and to move ahead in the campaign [8]. Fostering women's collective identity can enhance self confidence and avoid individuals being penalised for transgressing social norms [10].

Women not only have a remarkable ability to work together [2], but are also found to be more 'disciplined' (both financially and physically) [8] and less corrupt [2] when engaged in participatory governance. There is a general agreement that organising women in groups does enhance their influence and power in the community. This may primarily be because women in groups may be able to more effectively voice their concerns, especially in societies where women are culturally not accustomed to sharing their opinions and ideas for decision making. Further, working together as SHGs enhances their organisational and leadership skills for carrying out various tasks for community development. A SHG also provides women access to credit and capacity building activities in relation to management and credit. It acts as a platform for women to come together and resolve their disputes, share their concerns and undertake developmental tasks in the public domain [13].

social norms of 'appropriate female behaviour' [12] may prevent them to share views, ideas and preferences [2]. Where they do speak up, they might find little support for their opinions [12]. Thus, unless gender concerns are addressed specifically through a specialised consultation approach, it is unlikely that a generic/ conventional participatory methodology will be able to identify and address women's concerns regarding provision of services and infrastructure [9].

Reservations for women representation at key decision making positions too have failed to dispense attention towards women's concerns. Specifically, in '*pani-samitis*', where reservations are mandated, it is observed that often women occupying such positions are upper caste women [12] / wives of influential farmers [5]. It may also be construed that the voice raised by these women, may not be their own, but just be an echo of the opinions of the male members in the family. These women are also oblivious to the needs and priorities of the poorer/ less privileged sections of the community [5]. Thus, they may neither be interested, nor have the capacity to address their concerns. Poor and Dalit women thus, often remain unrepresented [12].

Reservations for women at the *Panchayat* Raj level also appear to have not succeeded in their intended goals [6]. Women of different castes, classes, backgrounds have different needs and interests. In the Indian context specifically, power is distributed not only amongst gender, but also within gender along caste and category. Gender based quotas fail to identify and address needs of the less privileged caste/class and ensure equitable benefit sharing across all sub-groups within the community.

Even caste based quotas, in addition to women's quotas, have not been able to ensure equity in water access. There are documented cases where women from scheduled classes in the *Panchayat* were unable to safeguard their interests due to social dominance of upper castes – whose women members in the *Panchayat* did not support their cause [6]. There are yet other cases of intra-caste differences, where the scheduled castes were represented in the *Panchayat*, by the members of the so called "creamy" layer of that section – being

inconsiderate towards the needs of women further lower in the caste hierarchy [6].

Further, the scope of power [6] delegated to *Panchayats*, and by virtue of that to their women members, also hinders effective participation in decision making at all stages and aspects of project development. It is primarily operation and maintenance, and siting of hand-pumps that come under the purview of *Panchayats*, and not technology options [6]. Thus, despite women's membership in local bodies, they are still not the decision-makers for their preference on issues relating to choice of technology to be adopted.

Very often, empowerment is narrowly linked to participation in the decision making process [6]. While this is true partially, women's empowerment cannot alone be achieved through mere participation in water programmes. Rather, the disproportionate distribution of power between men and women needs to be addressed [4], possibly through sensitization of stakeholders towards women's issues [6]. This "empowering participatory approach", implemented through reorganisation of power (eg. through ownership norms) within and outside the household can potentially assist in maintaining gender equality within the project and otherwise [4].

Clearly, it would be a mis-judgement to consider women as a homogeneous group [4] or to generalise their needs [6]. Rather, differences in access, power, class etc do exist [4] to characterise social dynamics. Addressing the above listed legal, cultural and power impediments are crucial for equitable sharing of water resources [9]. Cultural and social dynamics of the community, reflected through distribution of powers and workloads, are an important consideration towards effective re-alignment of access to water resources in a community [10]. Re-arrangement in decision-making structures (within household and at community level), along with re-distribution of workloads for equitable allocation between men and women, and an overall change in the attitude towards the women's potential and participation in management activities beyond the virtual boundaries of the household are important indicators of the envisaged women's empowerment through facilitating water access.

Women and Water Governance – What can go wrong?

This section exemplifies the above deficiencies in the conventional consultation process, whereby the resultant plans were flawed in meeting the needs different groups of women in a way acceptable to them.

A study done by Singh et al. (2005) was done to assess the role of socio-cultural set ups in determining success of policy interventions. The study was conducted between 1997 and 2002. The study observed that hand-pumps installed under the IDWSSD, which were expected to cater to drinking water collection needs of the rural women have failed to achieve their intended objective. The study identified that women in rural India assess water quality through certain physical properties like colour, smell and taste, which the 'hand-pumped' water failed to meet. Additionally, water from certain sources are known to have therapeutic qualities, and is hence preferred. As a result of differing perceptions of local women regarding 'good-quality water', women did not adopt hand-pump as drinking water resource despite easier access to hand pumps than the traditional water sources. Further, another initiative to train women for repair and maintenance of hand-pumps was started in 1985. The initiative too did not succeed due to lack of participation from women, primarily because (i) social norms did not encourage women from 'respected' families to take up work for a public cause and, (ii) women were hesitant to take up an activity (maintenance of water sources) that was considered a male arena*

Analysis of another initiative – setting up of a defluoridation plant in Phoolpur in 1980s – too revealed similar observations. The ground water in this village contains high concentrations of fluoride. The plant supplies de-flouridised 'safe' water through a number of taps. However, women have not accepted these taps as their drinking water source. Cultural perceptions hold 'stored' water as not being 'fresh' and thus unfit for consumption. The defluoridation process involves groundwater to be temporarily stored in tank, thus rendering it 'stale'. Thus, while women use this water for washing and bathing, 'fresh' water (with high fluoride) for drinking is sourced from elsewhere, despite several cases of acute fluorosis in the village.

Thus, from the study it is evident that an analysis of local perceptions and role-distribution must be done in order to identify critical entry points for policy interventions. Such pre-assessment shall allow policy makers to capture local perceptions of the intended beneficiaries regarding the nature and source of services provided through the intervention.

In the absence of adequate consultations with all stakeholders, external, universal, and generic assumptions regarding needs and interests of women are made – which may not be relevant or agreeable locally. The development plans thus designed and implemented would fail to capture "insider's perspective" and cultural notions that may be different from universal and scientific notions assumed to be prevalent locally as well.

**International Drinking Water Supply and Sanitation Decade*

Source: Ref [6]

III.c. Water-Women association in the Mountain Context

While women in all developing countries of the world are deeply impacted by water availability, women in fragile mountain ecosystems are particularly negatively affected by water shortages, primarily due to the (i) physical labour involved in traversing steep slopes for fetching water coupled with (ii) a general inadequacy of water infrastructure [14], especially of newer technologies, and (iii) vulnerability to natural disasters like landslides, cloud bursts etc, which further disrupt not only the man-made water infrastructure, but also the natural water sources, on which mountain people are heavily dependent and, (iv) restricted mobility of mountain people owing to only a limited transport infrastructure and harsh climatic conditions. Greater dependence on natural sources of water has led to mountain women developing a storehouse of information on ecosystem sustainability and seasonal variations in water availability in different sources; in addition to developing local informal/formal systems for sharing water resources.

In the Indian scenario, however, such systems in the mountain regions are plagued by caste and class barriers that have restricted provisioning of equity across all groups [3]. A particular study [3] in Kumaun region re-iterated this concern. In yet another study by Joshi 2011, sharp differences were observed in gender segregation of water roles – such segregation starting as early as around adolescence. Of the numerous tasks that young girls are engaged in, water collection occupies a major share. The study cites a tradition that is symbolic of obligating the responsibility of water collection to newly married women entering the household¹. Personal interactions with women localities also revealed that they had never been involved in planning and design of water systems for consultations [3]. Cultural factors have never encouraged seeking women's participation in the domain of community development.

Considering the particular sensitivity of mountain women to water availability, the case study selected for this article to demonstrate the role of women in water management is set in mountain area of *Kumaun* in Almora, Uttarakhand.

Case Study for women's participation in community based water sector projects, Almora District, Uttrakhand.

The International Centre for Integrated Mountain Development (ICIMOD) supported by the United Nations Environment Programme (UNEP) and Swedish International Development Assistance (SIDA) implemented a project 'Capacity Building of Women for Energy and Water Management in Rural Areas of the Himalayas' from January 2002 to December 2004. The project was designed to test a new approach to water and energy. The project was implemented in two hill or mountain settlements in India, with TERI as the national collaborating partner NGO which selected local NGO partners in India and Nepal to implement the project activities. The studies covered two districts in India (Solun in Himachal Pradesh (HP) and Almora in Uttaranchal. For the purpose of this article, case study of Almora (Villages Naila and Bajena) in Uttaranchal has been discussed with respect to interventions in the water sector.

The project implementation was guided by involvement of women at all stages – including identification of needs, selection of technology and implementation and management. A detailed baseline survey was conducted using various PRA tools such as household surveys, seasonal calendars, social mapping, wealth ranking, and participatory discussions. In both villages, acute water shortage was affecting women severely who had to engage in water collection activities for long hours. Moreover, the available water was not sufficient for irrigation, and thus the agricultural productivity in the villages was low. The detailed findings/ observations from the baseline survey can be seen in Table 1.

Description	Naila	Bajena
No. of Households	24	70
Population	122	528
Predominant castes	Brahmin and Rajput	Both upper caste (65%) and scheduled caste communities
Primary occupation	Agriculture	Agriculture
Irrigation facilities	No irrigation facilities. Entirely rain-fed	No irrigation facilities. Entirely rain-fed.
Drinking Water Resource	Underground springs called 'naulas'	Naulas are the most prominent source. There are two sources of drinking water in Bajena: a naula and a water tap.
Current Status	Acute shortage of water leading to low agricultural productivity. Decline of water discharge from the naulas has resulted in a severe scarcity forcing women to spend 4 to 5 hours/day for water collection. Especially during the summers, women have to spend their nights waiting in line to fill their vessels with water.	No irrigation facilities in the village leading to low agricultural productivity. Gradual deforestation and the drying up of the spring, resulted in acute water shortages, especially during the dry season. The naula, is located close to the village, but has dried up over time and as such, is not able to meet the water demand of the village. Women have to wait long hours to fill their pots from the trickle of water that comes from the spring. The water tap is located in another village and the water supply is not adequate even for that village. The tap water comes for only half an hour a day and its supply is highly erratic.
SHG strength	24	20

Table 1 Baseline Conditions in Villages Naila and Bajena in Almora, Uttrakhand

Interventions in water sector

A training session to inculcate gender orientation and group empowerment at (i) sensitization on their own roles in the water sector; and (ii) motivating them for group formation with set rules and regulations was organised as the first step. These trainings aimed at organising women, and bringing them together to train in managing functioning of women's group. The methodology adopted for the training programme included group discussions, question-and-answer sessions, and presentations.

In order to enhance organisational capacity and facilitate women empowerment, formation of women's self-help groups was envisaged and implemented. Formation of women's self-help groups (SHGs) assist women in gaining access to provision of credit and other support services to women beneficiaries. The SHGs also acted as a platform for women to come together and organise themselves to voice their concerns, learn about new technologies and raise funds. It also provided a platform for women to plan and implement projects aimed at community development.

Two SHGs were formed in Uttaranchal – one each in Bajeena and Naila. These groups have framed their own regulations for functioning. Monthly meetings are organised to discuss various concerns. Decisions are based on consensus, and transparency is followed at all stages. The rules governing functioning of the SHG mainly include a) not more than 20 members per group; b) collection of IRs 20 from each member at a regular monthly meeting; and c) allocation of the group saving fund to income-generating activities by taking loans from the bank.

Recognising the need for technology awareness in women's empowerment, capacity and support building activities and interventions like preparation of the technology manual, organising Training of Trainers (TOT) workshops, organising exposure visits for women, Provision of Training to Women's Groups, and adoption of technologies, as identified to be the most suitable were undertaken. Training programme on water management and water harvesting (including harvesting from rooftops) and storage was organised for the women members of the study villages. Additionally, in Bajeena, a practical training on the construction of rainwater storage ponds, plantations, and recharging the traditional water spring was organised

Technologies selected for implementation included installation of rainwater harvesting tanks, construction infiltration well, repair of naula water recharging on mountain slopes (through the plantation of saplings), and the construction of micro-reservoirs/ponds. The details of the implemented initiatives and their impact on water availability are given in Table 2.

Technology	Details	Reported Impacts
<i>Recharging the traditional water spring, in Bajeena</i>	<p>The site selected was in a micro-watershed located above the traditional water spring. Except for a small patch of forest at the top of the hill, the slope was entirely barren and did not have the capacity to retain any water during the heavy monsoon downpour.</p> <p>To facilitate seepage (in the hard and barren slopes resulting from years of erosion) for recharging of the spring, micro-reservoirs were constructed to trap and accumulate the water which would then gradually percolate into the soil thereby recharging the spring.</p> <p>14 micro-reservoirs of 20 × 30 m² each) were constructed.</p> <p>Hill slopes were planted with different tree species (2500 saplings on 5 ha including those with medicinal value, firewood and fodder species; the saplings were irrigated with the water collected in the reservoir.</p>	<p>Reported doubling of water availability, reduction in water collection times and drudgery</p> <p>Women now are also involved in other income generating activities, and have access to loans and revolving funds for the same.</p> <p>Villagers report that the overall flow of water from the spring has increased even though the relationship between the downpour and spring flow is obvious.</p>
<i>Construction of infiltration well technology in Naila</i>	<p>Land for the well was contributed by a woman. The construction costs were borne through a contribution of Rs 200 from each family. Community mobilization was a key in this initiative.</p> <p>The operation (opening and closing the well for 2 hrs each in morning and evening) of the well is managed by the women's group – on a rotational basis for each member.</p>	<p>Now each family is able to collect 4-6 vessels of water per day with ease - a marked improvement from the baseline where it took 45 minutes to fill a 15 lt vessel.</p>
<i>Rainwater harvesting tanks in Bajeena</i>	<p>25 roof rainwater-harvesting tanks were constructed using Locally available materials. The capacity of the promoted tanks was 5000 litres. ~25% of the costs were borne by the beneficiaries.</p>	<p>The tanks provided a source of irrigation water to women for cultivation of vegetables. Most of the women use the water to irrigate vegetables.</p>

Table 2 Technological Interventions in Almora, Uttarakhand

Impacts of the initiatives

Water availability: Overall the availability of water in the villages had increased. About 80% of the women reported the same. Prior to the implementation of the programme, women reported long waiting hours (even at nights) for collection of water. Post the programme implementation, an average of 35% (from 3.5 hrs to 2.2 hrs) saving in time was reported (Table 5.6). It is important to note however, that the time saving in collecting water was somewhat offset by an increase in the number of trips – with more water available, women collected much more water than before, but still in lesser time.

Co-benefits on health, income and standard of living: Women reported a prolonged sleeping time (by ~3 hrs) which would have positive impacts on their physical and mental health. 95% women reported reduced drudgery. Women (100%) also reported an increased access to credit, which they can avail for other income generating activities. 80% women reported increased access to income generating activities. Improved levels of hygiene and sanitation were reported by 60% of women.

Impact on attitude towards women: Overall, a positive change in the gender segregated environment can be observed. Women's role in the decision making process have come to be recognised. Women have come to acknowledge and share their own knowledge in water sector with other community members; and display greater confidence. With the success achieved by the initiatives, even men have come to consult women for household decisions regarding technology adoption. Local governance bodies too have acknowledged women's role in decision making for successful implementation.

Source: Ref [13]

III.d Co-benefits of all-inclusive decision-making

Improved access to water for women have several co-benefits – including:

- Women's engagement in income generation activities [9]
- Improved gender relations, and increased financial and social independence for women [8]
- Development of an enabling environment for various activities by women, development of technical and organisational skills, and generation of self confidence [13]
- Reduced poverty and vulnerability; and reduced migration [8]
- Resource conservation through increased use efficiency [2]
- Improved health, hygiene (Sanitation) and nutrition [9]
- Less exposure to risk of violent acts by anti social elements and animal attacks [4]

The ripple effects generated by improved water access to women through participatory approach, thus, directly or indirectly, contribute to the overall development of women and assist in correcting the existing power imbalances in the gender context.

III.e Entry points for improving integration of women's concerns in the water sector

Interventions at all stages of programme – including analysis, planning, implementation, monitoring and evaluation [10] are required for facilitating integration of women's concerns in the water sector. Actions along the following lines have been suggested by various studies [5, 10, 12, 14] to be potentially effective in this regard:

- Removing barriers to women's (and other marginalised group's) participation, including institutional reforms for increasing women's access to WUAs, adjusting location and timing of the consultations, provision of child-care facilities during consultation and participation proceedings
- Land allocation / inheritance reforms for gender equality
- Equal focus on irrigation and health and sanitation based water projects, possibly through multi-use water projects
- Holistic planning for all villages in a watershed, or those sharing the same resources
- Capacity building on technical, leadership and skill based issues.
- Collection of gender-segregated baseline data - esp. those relating to household division of labour, patten and preferences for use of water sources, household control over finances, capacity and willingness to pay - and development of gender-sensitive objectives and indicators
- Avoid generalisation of women's needs and capture local perceptions, Identification of intra-gender variations, capturing preferences for location, design, technology and communication methods
- Setting up of gender-responsive budgets, ensuring continued financial support
- Improvement in credit access to women
- Where required, build separate platforms for women to voice their priorities, which can

then be shared with other governance institutions.

Enhancing women's role in decision making through RGNDWM in India

The Rajiv Gandhi National Drinking Water Mission (formerly known as National Drinking Water Mission), was intended to push rural water supply with a focus to adopt a community-based approach based on demand instead the then prevalent supply driven initiatives established by the government. The projects under the mission, mandate community participation, with at least 10% of the project costs being borne by the community itself. An assessment of the mission revealed to have some positive effects on women's condition with respect to water collection activities. About three-fourth (75%) of the respondents reported a reduction in their workload – in Himachal Pradesh, as many as 95% of the female respondents reported in affirmative. Three-fourth (75%) of them also reported a significant reduction in fatigue. Among the 5 states included in the assessment, the proportion of women reporting this positive impact has been found to be the highest in the State of Himachal Pradesh, as reported by almost all (95%) the female respondents. Women also reported increased participation of women in the community activities.

Source: Ref[15]

IV. Conclusion

It is now widely recognised that water is not “gender-neutral”. Women and men have unequal gender power and access to resources. Often, their needs are competitive and differing needs. Men, most often being in control of budgets, may not value women's concerns. The needs of women as domestic water managers are often ignored in large scale irrigation plans [10]. It is felt that water policies in India are ‘weak’ gender aspects [16]. Cultural barriers may impede women to assert their demands effectively. The resulting scheme may therefore lead women to be even more dependent on men [10]. The fragility and lack of infrastructure in the mountain regions magnify the water woes of its women, which are expected to further multiply in view of the climate change effect. Thus, adaptation strategies for climate change must include the gender perspective [17, 18] so as to be more equitable, and thus ‘complete’. Thus, there is an urgent need to involve women in decision making at all levels to ensure equity in water access, as well as to ensure effectiveness of a democratic governance system. There is also a need to acknowledge that different groups of women have different needs, and

generalising their interests is not an effective approach for planning developmental initiatives in the water sector. Studies have shown that mere quotas for women at decision making levels, may not be helpful. Rather, a wider change in the social fabric at the community level is required which recognises women as equal in capacity to make decision and provides equal opportunity for the same. It is also worth noticing that participation and empowerment mutually reinforce each other in case of women. It may be said that the desired results are better identified at policy level, while lag exists in the mis-judgements regarding what interventions should be executed when and how so as to achieve the desired effect. In the Indian context, SHGs can help fill in the void left by the lack of institutional mechanisms to involve different women in decision making for community development projects. Involving women in such initiatives is also found to have co-benefits on health, sanitation, income, education, economy, migration patterns etc.

V. References

1. Kulkarni, S., *Women and Decentralised Water Governance: Issues, Challenges and the Way Forward*, Review of Women's Studies, XLVI (18), 2011, 64-72.
2. UNESCO. 2004. *Water and Ethics: Women and Water: An Ethical Issue*, UNESCO, Paris
3. Joshi, D., *Caste, Gender and the Rhetoric of Reform in India's Drinking Water Sector*, Review of Women's Studies, XLVI (18), 2011.
4. IVENS, S., *Does Increased Water Access Empower Women?* Society for International Development, 51, 2008, 63–67.
5. IFAD. 2012., *Gender and water: Securing water for improved Rural Livelihoods - The multiple-uses system approach*. IFAD, Rome
6. Singha, N., Bhattacharya, P., Jacks G. and Gustafsson, J., *Women and Water: A Policy Assessment*, Water Policy, vol 5, 2003, 289–304
7. United Nations Department of Economic and Social Affairs. 2004. *Background Paper No. 2. A Gender Perspective on Water Resources and Sanitation*, Commission on Sustainable Development, New York
8. CAPRI. 2007. Working Paper No. 61, *Women's Collective Action and Sustainable Water Management: Case of SEWA's Water Campaign in Gujarat, India*. International Food Policy Research Institute, Washington, DC
9. *Background Paper for the World Vision Process, Mainstreaming Gender in Water Resources Management: Why and How?*
10. SDC. *Gender & Water: Mainstreaming Gender Equality in Water, Hygiene and Sanitation Interventions*, SDC, Bern
11. United Nations. 2006. *Gender, Water and Sanitation: Case Studies on Best Practices*, UN, New York

12. SOPPECOM, Utthan and TISS. *Reforming Water, Adding Women: Does decentralised water governance further gender justice in India? - Issues and Recommendations*. Study jointly done by SOPPECOM, Utthan and TISS
13. UNEP & ICMOD. 2005. *Women, Energy and Water in the Himalayas Incorporating the Needs and Roles of Women in Water and Energy Management*. UNEP, Nairobi.
14. Regmi, S.C. and Fawcett, B., *Men's Roles, Gender Relations, and Sustainability in Water Supplies: Some Lessons from Nepal*, 2001
15. Evaluation Study on Rajiv Gandhi National Drinking Water Mission. 2010. Programme Evaluation Organisation, Planning Commission, Government of India, New Delhi
16. DFID. 2002. Final Report: Gender Issues in the Management of Water Projects, Knowledge and Research (KAR). Institute of Irrigation and Development Studies, University of Southampton
17. Tiempo Climate Newswatch. 2013. *Gender and Climate Change in the Himalayas*.
18. UNEP. 2011. *Women at the Frontline of Climate Change Gender Risks and Hopes a Rapid Response Assessment*. UNEP, GRID-Arendal

ⁱ A day after the wedding, newly married women are required to visit the family spring for fetching water