

WOMEN IN WATER SECTOR : NEED FOR A REVOLUTION

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ABSTRACT

Woman, the carrier and giver of life to the human species and water, the essential ingredient and symbol of life, are two universals, without which life cannot exist. Both need to be healthy for mankind and the planet in general, to prosper and survive. No wonder, vedic hymns have praised most of the rivers as goddesses. Women play a very significant role in water sector. However, there is a need to make their role more effective.

Women play a crucial role in the water sector in India. As 83% of the total water consumption in the country is used in irrigation i.e. irrigated agriculture, women's role in water sector assumes significance. However, their role in this regard, particularly the agriculture sector, is generally under estimated and undervalued. The farm women have to shoulder a large chunk of agricultural activities which are multifarious. At the same time, they are homemakers, cattle managers and laborers on farms. The relegated position of women in agricultural sector is mainly because of two reasons viz. (i) ownership of property and control of assets are with the men and (ii) the front activities of agriculture viz sowing and ploughing etc are done by men.

In realm of transfer of management to farms, the women folk should be made to play a definite and distinctive role which will go a long way in making participatory irrigation management a success. Similarly, their role needs to be strengthened in areas such as drinking water supply and sanitation.

Some steps have been initiated for women empowerment in the country. However, there is a need to make concerted efforts in this direction so that their role in the water sector, which has been passive, unrecognized and behind the scenes can be made more active , direct and recognized.

The paper touches upon the role of women at global level while describing it in detail at the national level. It presents the need for reforms in this regard and the requisite steps needed to be taken.

1.PROLOGUE

Women have been treated as Goddesses in our scriptures and religion : Laxmi- the Goddess of wealth, Saraswati – the Goddess of Knowledge and Kali - the Goddess who destroys all evil and evil doers. Water has also been worshipped as God – Varun or Jal Devta. Woman is the mother of all mankind, while water is treated as the harbinger of prosperity. Also, there has been an intricate relationship between women and water : one, a living being and other , a life giver.

Women are said to be the custodians of Environment - of which water is a major component (the other two being land and air). Thus women are also the custodians of water. And this explains the relationship between the two.

2. ROLE OF WOMEN IN WATER SECTOR : GLOBAL

The role of women in water sector has been universally recognized. It was specifically mentioned during the International Conference on Water and Environment held at Dublin during January, 1992. One of the four guiding principles of this Conference viz ' Women play a central part in the provision, management and safeguarding of water ' states as under :

“ This pivotal role of women as providers and users of water and guardians of the living environment has seldom been reflected in institutional arrangements for the development and management of water resources. Acceptance and implementation of this principle requires positive policies to address women's specific needs and to equip and empower women to participate at all levels in water resources programmes, including decision-making and implementation, in ways defined by them.”

Agenda 21 (known as the blueprint for sustainable development for the 21st century), the outcome of the United Nations Conference on Environment and Development held in Rio de Janeiro during June,1992, also makes references to women's role in various aspects of water resources development and has made a number of recommendations for improving this role. To achieve integrated water resources development and management, Agenda 21 advocates the need for development of public participatory techniques and their implementation in decision – making, particularly the enhancement of the role of women in water resources planning and management.”

3. ROLE OF WOMEN IN WATER SECTOR : INDIA

Women play a crucial role in the water sector. In fact, water is mainly women's business. One comes across numerous paintings and sculptures showing women carrying water but none of these would show men doing this.

There is marked difference in the attitudes of men and women towards basic natural resources, such as water, forest and land. Men see these resources basically which gives them crop and money. It is women who depend on the eco-system for their total needs of food, fodder, fuel , water and livelihood. Women are traditionally against deforestation, depletion and siltation of water resources, land degradation and environmental pollution. No women wastes water because she is aware of the trouble she has in fetching it.

Women are very important stake holders in water resources management. Nearly half of agricultural labour force is provided by women and more than 30 percent of poor households in rural India are headed by women. The work load of women is directly influenced by the availability of water either for irrigation or for domestic purposes. Studies have indicated that development of irrigated agriculture which is labour intensive increases the work load of women. Similarly women are required for domestic water. They are required to carry water from far off places if it is not available nearby. It is the women who face lot of problems due to lack of sanitation facilities. Women must be encouraged and allowed to take greater participatory role in water management. Women should invariably be represented in water users' associations. NGOs and voluntary organizations should have women members. Be it an irrigation project or a water supply project, the socio-economic surveys conducted should ascertain the needs of women. More women should also come forward to take an active role in water management.

The role of women in different and varied activities would be discussed now.

3.1 Status Of Women In Agriculture

The women in agriculture sector are generally under estimated and undervalued. The farm women have to shoulder a large chunk of agricultural activities which are multifarious. In fact, they play a dominant role in agriculture sector. The activities like harvesting, threshing, weeding etc. are predominantly done by women. At the same time, they are homemakers, cattle managers and

laborers on farms. The relegated position of women in agricultural sector is mainly because of two reasons viz. (i) ownership of property and control of assets are with the men and (ii) the front activities of agriculture that is sowing and ploughing etc are done by men and it is in the field that technological improvements in the activities handled by women has not been adequate.

3.2 Role Of Women In Participatory Irrigation Management (PIM)

In realm of transfer of management to farms, the women folk should be made to play a definite and distinctive role which will go a long way in making participatory irrigation management a success. They should be treated at par with men irrespective of the ownership issue as they are an important constituent of the whole agricultural activities. One way to do so, is to involve women representative in the water users associations or else created Mahila Mandals encompassing water users associations who should be allocated due role to play in functioning of water users associations. The active association of women in the water users associations will help to improve technologies in their field of activity. But for any such action to mitigate gender discrimination to be successful, it is essential that a massive training and education programme be taken up as a prerequisite.

3.3 Role Of Women In Drinking Water Supply & Sanitation

As in most developed countries, in India it is women who are responsible for collecting water and managing its household use. A knowledge, Attitudes and Practices (KAP) study showed that women in rural India spent between one to four hours a day collecting water. They make an average of nine trips to a water source, collecting 192 litres of water for an average six members household, or 32 litres per person per day. Women's sense of community and solidarity is a source of big strength which is required to be tapped and as such women must be encouraged and allowed to take greater responsibility in water management. Local women usually have the best knowledge of the water sources in their communities not just where they are located but how reliable they have been over the years. They know who lives where in their village and what the community's practices and preferences are, how people use their water and how they dispose of their wastes. This crucial knowledge was sometime ignored in the early days and often meant that new government developed water sources or latrines were not used.

The construction of water resources projects in the area helps in minimising the sufferings of rural women as the water resources projects are planned, designed and executed with a drink water supply component alongwith other beneficial uses. This helps in bringing water near their door steps, thus making women free of footing out large distances in the quest of water.

3.4 Knowledge, Information & Training Module For Women

Recently, there has been greater emphasis on empowering women by imparting knowledge, information and training. The Community Based Convergent Services Programme and the Information, Education and Communication (IEC) component under Development of Women and Child in Rural Areas (DWCRA) seek to sensitize women regarding their needs and to help them prioritize and articulate these effectively and fulfill them by utilising existing facilities / provisions under various government programmes in a better way. The United Nations Children's Fund (UNICEF) has been working with the Government of India since a long time to provide safe water to the country's rural areas. Now, in UNICEF supported projects, local Women and Village Water and Sanitation (WATSAN) committees help decide the best location for a new water source. Mobilizing community to decide where to place water sources and training village women as hand pump mechanics were first step on community participation in the water supply and environmental sanitation programme because not only are women the prime water and sanitation managers, they are also responsible for passing on hygienic information to children.

The above clearly brings out that involvement of community without depending on government and subsidies are congenial to the success the programme and the role of the Government needs to be

limited to that of a facilitator and promoter of services rather than provider of facilities. In order to accelerate the programme, demand generation through social mobilisation drives and delivery system utilizing Rural Sanitary Marts are taken up with priority. Components of Human Resources Development (HRD) for imparting training appropriate technology and know how for construction of sanitation facilities and IEC for mobilising the rural community through awareness generation (on WATSAN), motivation and attitudinal changes are the hall marks of the Central Rural Sanitation Programme (CRSP).

3.5 Role Of Women In Decision-Making Process

Since by virtue of the provisions of the Constitution (73rd Amendment) Act 1992, a substantial number of women have been enabled to take direct part in the process of self-governance through the Panchayats and also playing an active role in the decision-making process. NGOs and voluntary organisations should have women members. Be it an irrigation project or a water supply project, the socio-economic surveys conducted should ascertain the needs of women.

3.6 Programmes For Upgrading The Role Of Women

A sustained effort in skill upgrading and information empowerment of women is needed in existing and new technologies. More short duration courses and entrepreneurship development courses in new technologies should be designed and organised to meet the location specific needs of women at village level.

Diversification of role of women and opening up for more opportunities for women themselves, namely, processing of foods, value addition in post harvest technology, poultry farming, sericulture, agro-based cottage industries etc are the need of the hour.

Extension efforts should be directed towards rural women with induction of considerable number of well trained workers who would promote and upgrade women activities at grass root level. Progressive farmer women may be identified who can be engaged as potential resource persons. They will also inter-act with Research Scientists and Research Workers. A specific research programme should be designed on problems of women with an emphasis on development of new technologies suitable to women. Similarly, research programmes may be directed on drudgery reduction, labour diversification and income enhancement.

4. WATER AND WOMEN'S STRESS

The effort that women and girls have to put in to fetching water for household consumption has been one of the underlying social ills. Water scarcity has a significant impact on the health of women and girls. Despite the high levels of official coverage women still carry the burden of bringing water in to the home. This is compounded by the stress as a result of ecological degradation and migration of men to cities in search of work, in part, because of shortage of water for agricultural activities. The United Nations Children's Fund (UNICEF) and World Wide Fund for Nature (WWF) got conducted some studies regarding Fresh Water for India's Children and Future. The gist of the studies conducted in Gurrabbadu (Andhra Pradesh) and Danda (Garhwal hills in Uttar Pradesh) are given hereafter which show the plight of women, particularly the girl child, in water sector.

4.1 Water burden of women and girls in Gurrabbadu

A woman on average has to make ten rounds to the bore well to fetch 150 liters of water (for a family of four). This is equivalent to 5 km walking and takes at least 2 hours, excluding any waiting time at the hand pump. During the critical period, normally in summer, some people have to get water from irrigation wells, often paying some price both in kind and cash. There are 15 handpumps in the watershed – 9 public (of which only 5 are working at any given time) and 6 privately owned.

Physical monitoring of all the hand pumps on 14 August 1995 and 13 January 1996 indicated that the quantity of water drawn is 50,985 liters and 41,940 liters respectively. This works out to 26 and 32 liters per capita. Further, monitoring of the handpumps indicated that some of them are over used for more than 15 hours a day providing about 20,000 liters a day. Effectively in a season only two or three borewells are supplying more than 80% of the fresh water needs – the remaining are either low yield or under repair.

Women and girls are estimated to carry on average 150 liters of water per day in the summer months. Together a adult woman and a girl in the same family may carry as much as 375 liters of water per day. Women and girls in the same household in the upper income groups in the study area carry as much as 50% more water – around 562 liters per day – because they have more cattle and large family size. A fifteen liter water container is used to carry water and at that rate and average female makes 25 rounds per day between the handpump and home. Table below indicates the amount of water carried by men, women and children. Children, particularly girls, carry by far the greatest burden of fetching water.

Category	Population	Per day water withdrawn (litres)			Annual Total (litres)	Per capita water withdrawn (litres)		
		Monsoon	Winter	Summer		Monsoon	Winter	Summer
Male adults	428	13,860	5,550	11,580	3,718,800	32	13	27
Female adults	420	15,765	16,365	31,455	7,630,200	38	39	75
Male children	379	8,610	7,275	9,795	3,081,600	23	19	26
Female children	365	15,345	12,165	23,130	6,076,800	42	33	63
Total	1592	53,580	41,355	75,975	20,509,200	34	26	48

This effort is further compounded by the non-functioning of handpumps and waiting time at the pumps. Of the total of 9 public handpumps in the study area, not more than 5 were found to be functional at any given point of time with differing yields across seasons and depending on their proximity to the irrigation borewells. In the crisis months from 1993 to June 1995, it was noted that males carried water from far distances on bicycles. About 11% of the drinking water by the end of the crisis period came from privately owned pumps half of which were energized. It is considered that this trend of energizing the drinking water borewells will continue to pick up as public borewells are seen to be more a poor person's alternative.

There is an economic or opportunity cost also to women in fetching water from handpumps, in addition to the health cost. The handpump technology was introduced when rural wages were significantly lower than at present. The time women have to spend at handpump is now more valuable than before due to other opportunities. In areas where there is greater water use the labour rate is higher because of the greater opportunity for employment. As a result, the cost of women's time lost in fetching water is higher. Women spend more than 3 hours to fetch the required minimal 150 liters. Even at the rate of

Rs. 2 per hour of woman's work, the opportunity cost of fetching 150 liters of water is Rs. 6 per day. At this rate, the cost of water is equivalent to Rs. 40 per cubic meter – ten times higher than water provided inside the house in Delhi.

In the Rayalseema study, 25 families out of 60 living in Palakuntla village migrate on a seasonal basis to adjacent districts, usually from January to June, moving to an area where sugar cane is grown under irrigation. Per capita earning in one season could be around Rs. 1,000, a considerable amount considering that annual per capita earnings in this region are about Rs. 2,400. People here say: "We are clearly better off now; we are able to eat throughout the year". A second, but less significant form of migration relates to pastoral movements of sheep herds to other areas in search of water and fodder.

Box 1. Fresh water conflict in Rayalseema

Kuruva Dasarath, a small farmer, dug an 11mm diameter borewell at the edge of his one acre plot. It was a success and he was happy that he could irrigate an acre of paddy, followed by groundnut. Shortly thereafter, his neighbour, Kuruva Tirupal, a well to do farmer, sunk a 16.5mm diameter borewell fitted with a submersible pump just three meters from Dasarath's borewell, in spite of the latter's request not to drill too close to his well. Immediately, Dasarath's borewell dried up and an acre of paddy was lost as a result.

Dasarath has four brothers who encouraged him to drill another 16.5mm diameter borewell at the same spot. They collectively borrowed the money for the second venture. The drilling process affected Tirupal's well so badly that the casing of the borewell fell out and the submersible pump was stuck inside. Immediately, Tirupal accused the brothers of ruining his borewell and took the case to the village elders.

Tirupal has now demanded that he be allowed to share the running borewell along with Dasarath. The panchayat was unable to resolve the case.

The per capita consumption of water in the Gurrabbadu watershed, including irrigation varies among social classes. If all fresh water use is considered, including irrigation then per capita consumption is four times higher among the households with over 10 acres of land compared to those owing only 5 acres.

While no differences were noted in terms of access to drinking water by different castes, water conflicts are not uncommon and generally difficult to resolve even at the community level because of the nature of 'water rights' conferred on landowners (Box 18).

The per capita daily human consumption in the Gurrabbadu watershed was 44 litres during summer, 27 litres in winter and 36 litres during the rainy season. The proportion of fresh water use by sheep, cattle and humans in the watershed is 11%, 17% and 72% respectively. There was, however, little differences in the consumption rates of the different communities of Madiga, Boya, Golla, the rich farmers, and the landless – all of whom seem to suffer equally low levels of consumption. During the two days in August and January per capita consumption was noted as 22 litres and 17 litres respectively with the latter lower because of the bathing pattern and the migration of sheep and people.

4.2 Eco-stress in Danda

In the Garhwal hills, women are engaged in a variety of agricultural activities such as fertilizing the fields, ploughing, sowing, weeding, harvesting and threshing. Women typically spend eight hours a day in the fields apart from the time spent in collecting water.

In the Danda area, the water authority provides water through a rural water supply scheme. Although there are four storage tanks and 15 standposts, the water supply is highly irregular and unpredictable. On average, the standposts function for just nine days a year; in May 1996, at the height of summer, they only provided water on one day. As a result, the Danda women are highly dependent on spring water.

Water stress contributes to many hardships for women in this region. Because of the low availability of water, vegetation growth is low, which means that there is less green fodder. This in turn lowers the production of both *gobar*(cow dung) and milk. Since *gobar* is used as manure, less quantities produced ultimately results in low agricultural yields. There is, therefore, a vicious circle of water and ecological degradation impacting on the health of women—eco-stress (Box 2).

On average, women spend 1.5, 2, and 3.5 hours collecting water each day in the post- monsoon, winter and summer months, respectively. Collection of fodder and fuel is also time and energy demanding. It was estimated that women daily spend 3-4 hours collecting fodder and 5-6 hours collecting fuel at different times of the year. In total, working in the fields, collecting water, fuel and fodder takes from 10-13.5 hours of the women' time each day.

Box 2. Saraswati Devi – a story of eco-stress in Danda

Saraswati Devi was born and brought up in Danda. Married at the age of 11, her husband used to earn a living by taking pilgrims in a *dola*(wooden carriage) to Badrinath and Kedarnath. Unfortunately, her husbands died soon after their marriage and Saraswati did not marry again but returned to Danda and took responsibility for her two younger brothers. Her brothers have migrated to the cities. She is left with one acre of agricultural land, one cow and Rs. 120 as a widow pension.

Even at the age of 72, Saraswati gets up at 7 o'clock and after having tea, she feeds the cattle. Then she goes to the spring to collect water, traveling almost 300 metres, waits for a long time for her turn and then carries almost 7 to 8 litres of water back to her house. She makes two chappatis for her self and goes to get fodder. She then walks almost 600 metres to reach the field where she spends 3 hours. She comes back and cooks and eats her meal. After a little rest she again walks almost 600 metres and brings 5-6 Kg of fuel, cooks her evening meal and goes to bed.

By comparison, women in Chandrabhaga have functioning standposts and good forest cover, which caters to their requirements of fuel and fodder.

In the Garhwal area, upper-casts migrate to towns for settlements purposes. People of the lower casts remain in the villages. Migration in the two villages was found to range from 26 to 50 per cent of the total population. Migration entails a high cost to the community, particularly women. Difference prevail between the two villages in this study area. In Danda which suffers greater water scarcity than Chandrabhaga, of the total population of 983, 148 people are seasonal migrants, while 289 are permanent migrants. In other words, almost 50 per cent of the population migrate to outside towns. In the case of Chandrabhaga, around 26 per cent (342 people of a population of 1,320) migrate to other areas. Male migration, particularly seasonal, is higher Female migration. A comparison of the two areas showed that migration is higher in the village with greater water scarcity, although they are both in the same eco-region. Male migration has a

significant impact on women who are left behind not only to fetch water from far distances in mountainous areas but also to ensure that there is adequate food, fodder and fuel for the family.

5. NEED FOR REFORMS

The above studies, one from the southern state of Andhra Pradesh and other from the northern state of Uttar Pradesh, are truly representative of the state of affairs in the country.

(In fact, these studies may well represent the conditions prevailing in all the developing countries, especially in the South Asia region). Although women have been playing a very important role as users and managers of water, their role has been passive, unrecognized and behind the scenes. There is a need to make their role more active, direct and recognized.

6. REFORM AGENDA

A number of actions have been suggested in Agenda 21 regarding improvement of the role of women in water sector. It is felt that, if implemented in letter and spirit, these actions would lead to achievement of the goals referred above as also in sustainable development of water resources. The actions proposed in Agenda 21 are as under:

- a) Development of public participatory techniques and their implementation in decision making, particularly the enhancement of the role of women in water resources planning and management.
- b) Strengthening of the managerial capabilities of water-user groups, including women, youth, indigenous people and local communities, to improve water-use efficiency at the local level.
- c) Institutional reforms promoting an integrated approach and including changes in procedures, attitudes and behaviour and the full participation of women at all levels in sector institutions.
- d) Human resource development at all levels, including special programmes for women.
- e) Encouragement of the local population, especially women, youth, indigenous people and local communities, in water management.
- f) To recognize and actively support the role of rural populations, with particular emphasis on women.
- g) Train staff at all levels, including farmers, fishermen and members of local communities with particular reference to women.

7. EPILOGUE

A green revolution brought about increase in food production in the country. Subsequently, a white revolution brought about tremendous increase in milk production and dairy products. Now, we are planning a blue revolution to achieve sustainable development of water resources. Similarly, another revolution is needed to bring about the required changes in the policy, planning and implementation of various programmes for improving and making effective the role of women in water sector, which has been more or less on the paper only till now. What name and colour is given to this revolution is immaterial. What matters is the sincere implementation of the steps contemplated which will bring around a radical change in the status of women in water sector.

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