CHAPTER 1

THEORETICAL CONCEPTS AND THE FRAMEWORK OF STUDY

Theoretically, the issues related to the politics of development, especially governance of drinking water resources have been discussed in this study. Firstly my attempt in this chapter is to explain these concepts- development and governance- and then to analyse what the existing literature on the experiences from across the globe have shown in the context of these framework. The issues of development as discussed here include the emerging nature of drinking water crisis and its impact on women economically and on their health and social status. It also includes the issues related to management of water resources and role of women through existing training programmes for increasing their participation. Carrying forward some of the issues raised in these studies, this chapter outlines the framework of study for the present work. It points to issues of governance of water in the context of decentralization and the increased political role of women through Panchayati Raj in India, and the role these can play in empowering women at the grassroots.

Politics and Development

Theoretically, the study of politics and development within the discipline of political science includes a study of democracy, the state, civil society and gender especially in developing countries like India (Tornquist 1999: 3). An attempt has been made through this study to build an understanding of how these different factors interrelate in processes of development.

On a general level, 'development' refers in the context of this study to a process in which resources are put to better use- in a country, a region or a sector of society. In the context of this study, it is the water sector. The term 'better' requires, of course, an explanation of how and for whom a particular way of using resources is more advantageous than another. For a given use of resources might even result in the best possible development for one social group and in negative development for another (Tornquist 1999).
The research will concentrate on what men and women do with the natural resources, technology, capital, human labour, planning and co-operative capacity. Studying development problems thus involves identifying and analysing the difficulties people encounter in their efforts to make – on the basis of their varied interests and ideas – the best possible use of the potential of their country, region or sector of society. The role of politics in developing countries becomes important even in the economic sphere due to structural adjustment programmes promoted by government, affecting the use and availability of resources and resulting in politics of deregulation and privatisation and the emergence of concepts like civil society, decentralisation and good governance (World Development Report 1997).

In assessing which political forms, contents and processes will promote which kind of development. Our understanding of politics should mean much more than the state and its expansion. Politics in this sense takes place through movements and organisations in civil society as well as business corporations (Olle Tornquist 1999:18). This study, therefore, has been undertaken in the political framework of water politics encompassing the questions, institutions and activities that are object of common societal deliberations. The forms of politics refer to political structures, institutions and organizations in the water sector, which are found on various levels-local, national and international. The content of politics consists of the ideas, action programmes and political strategies for furthering development of water resource. It also means the actual decisions taken and their implementation by political means. Political processes that have been discussed take place in the common arena within which political actors i.e. all those involved in water governance at all levels operate. The arena and processes are constituted and limited by the scope, forms and content of politics i.e. by political structures, institutions and organisations, and by the predominant ideas and strategies. The political actors then collaborate and compete in their efforts to safeguard various interests and to carry out their plans. Their actions, in turn have repercussions for the scope, forms and content of the emerging water politics in the state.

**Governance and Development**

Within the broad theme of the politics of development in the water sector, the governance perspective provides an organising framework, which is a slight departure from the perspective
in which the earlier studies have been conducted and analysed. Earlier studies focused on the management perspective to which this study has also endorsed and taken into account, as this also is an important consideration in governance.

The traditional use of governance and its dictionary entry define it as a synonym for government. In particular, government is understood to refer to the formal and institutional processes, which operate at the level of the nation state to maintain public order and facilitate collective action. Government is characterised by its ability to make decisions and its capacity to enforce them. Governance involves the actual ability of the government to govern. It concerns the opening up of efficient state institutions in consultation with co-operating people in civil society (Gerry Stoker 1996).

Governance signifies ‘a change in the meaning of government, referring to a new process of governing; or a changed condition of ordered rule; or a new method by which society is governed’ (Rhodes 1995:19). The outputs of governance are not different to those of government. It is rather a matter of a difference in processes. The concept of governance points to the creation of a structure or an order, which cannot be externally imposed but is the result of the interaction of a multiplicity of governing and each other influencing actors. (Kooninman and Vliet 1993: 64). Partnership through systemic co-ordination for governance helps in establishing a level of mutual understanding and embeddedness, which helps organisations to develop a shared vision and joint working that leads to the establishment of a self-governing network. This is most visible in the management of common-pool resources in poor rural communities. (Ostrom1990; Keohane and Ostrom 1995). Self-organised systems of control among the key participants are seen as more effective than government imposed regulation. Yet, the government while not occupying a sovereign position can indirectly steer networks to ensure accountability of the partners. The strength of this approach is apparent in the understanding of resource management and collective action. It has also been important in promoting the study of new development partnerships between public agencies, non governmental organisations and users in resolving local resource management problems. Its other strength lies in its ability to embrace ‘process’ methods of development planning, for the incremental resolution of complex problems in programme development. ‘Governance comprises the mechanisms, processes and institutions through which collective decisions are
made and implemented, citizens, groups, and communities pursue their visions, articulate their interests, exercise their legal rights, meet their obligations and mediate their differences' (Rhodes 1995). Therefore, the governance approach has been adopted in developing an understanding of this study.

Global political environment is rapidly changing. A large number of democratically elected governments are coming up all over the globe. At national and local levels, democratic governments and market-based economic systems are replacing authoritarian and statistic regimes. However, despite rapid and widespread economic growth, there is broad based evidence that the benefits of growth have not been equitably distributed. The widening disparities in economic performance are creating even more polarized societies. Therefore, it is becoming increasingly clear that the ability of the nations to achieve their human development goals hinges largely on the quality of governance. Infact good governance and sustainable human development are indivisible and developing the capacity for good governance is considered a primary means to eliminate poverty. 'The challenge for all societies therefore is to create a system of governance that promotes, supports and sustains human development to realize the highest potential of everyone and well being of all, thus 'eliminating poverty and all forms of exclusion' (UNDP 1997). In this context this study also aims at looking into the 'good governance' model for sustainable human development.

The paradox of the governance perspective is that even where government develops an appropriate operating code, governance failure may occur. The concept of governance failure is crucial to understanding good governance. In this context, the emerging water crisis due to the governance failure has been discussed at different levels of analysis in the study. Failures of leadership, differences in time scale and horizons among key partners and the depth of social conflict can all provide the seeds for governance failure. Tensions and difficulties with the institutions of civil society, as well as inadequacies in the organisations that bridge the gap between public and private, may also lead to governance failure. Thus, for example Atul Kohli has used governance capacity of different regimes and the degree of effective institutionalisation to explain whether or not different states in the Indian subcontinent succeed in their development policies (Kohli 1991). And in the context of this study also, building of the
governance capacity through effective institutionalization and by avoiding the above pitfalls have been considered crucial in resolving water conflicts.

**Issues on Development of Water: Experiences from across the Globe**

We will now draw our attention to some of the experiences from the communities of different countries and review some of the studies undertaken earlier around this theme. Several interesting issues have emerged through these studies that cannot be ignored while undertaking the study. It is important to know the main focus and ideas of these studies in the backdrop of the existing literature in order to be able to locate the importance of this work as a step ahead or different in some ways in comparison to other studies. Since we basically endorse the conclusions of these studies, we will then take the arguments further to include the new issues raised in this study.

Before we come to the review of these studies, it will be worthwhile to elaborate on the nature of the emerging water crisis situation, which has been raised as the issue of much debate and discussion globally for quite some time now.

Studies claim that ‘water politics between states over their share of dwindling water resources is expected to intensify in the future. Water scarcity is the single greatest threat to human health, the environment and global food supply. It also threatens global peace as countries in Asia, and the Middle East seek to cope with shortages’ (Seckler et al. 2000). Clearly, the signs of such conflicts are already with us, camouflaged by uneasy truces and agreements like in the American south-west in the Danube basin, in the sub-continent. Civil strife over water resources have already occurred between states in south India and led to tensions between cities and their neighbouring countryside. Much of the east and North Africa, parts of Central America and the western United States are already short of water. Concerns about water are based in part over the availability of supplies stemming from the vicissitudes of the hydrological cycle, the growing populations and uneven distribution of resources around the globe. Infact, it is being warned that in the history of human civilization, while the first wars on earth were fought for ‘Salt’and the second wars were fought for ‘Gold’, and the third major
agreement could be reached in this informal way did they go to ask irrigation officials for help. Officials of the Ghana Water Supply and Sewerage Board have mentioned similar conflicts mediating and depoliticising roles of women and youth in domestic water supply projects. Similarly, in the Sahel zone of Niger, a system of negotiations existed but when public wells were introduced, source management declined and conflicts over water increased. Similarly conflicts occur in dry areas of Tanzania and Kenya where women make shallow drinking water wells in dry riverbeds but while they are meant for human drinking water it is not always possible to prevent them for being used and trampled by cattle leading to disharmony. Similarly in Malawi women disliked men's use of water and clay around water points for brick making, when this creates deep pits, which fill up with stagnant water and generally makes the upkeep of hygiene and safety to small children a problem. In Ecuador conflicts occur mostly over water theft in the dry summers. Jacome and Krol found no indication that female irrigators were robbed more often than males. Moreover the women have an active role in water management in the field and try to solve the problem directly. Only when direct conflict resolution fails will they call upon higher levels of management, in which they are far less well represented.

As already reiterated several studies have revealed that women make careful decisions about water use patterns. They decide which water sources to use for various purposes, how much water to use, and how to transport, store, and draw the water (White 1977). In villages in Ethiopia, Nigeria, India, Bangladesh, Nepal, Sri Lanka, Indonesia and Thailand women select certain sources for drinking water and other sources for washing, bathing, and watering the cattle (Wijk 1985). This is also the case in Tanzania (Drangert 1993) and Mexico (Whyte, 1976). Wijk suggests that as managers, women do not select water sources arbitrarily. To determine which sources they will use for which purpose, three types of criteria play a major role, though other factors cannot be excluded. The major criteria are: economic demands, perceived water quality and social relationships. Women also use these criteria for judging new sources. Knowledge of these criteria and understanding of the selection process are part of the design of new services, when programmes want to see new services not just established, but also used, maintained and paid for. However, this is not necessarily so far all water use. Differentiation in water uses is increased when women have a choice of several sources at competitive distances, as for example in communities in wet highlands: Three
quarters of the Ethiopian women in a simple from five highland villages took water for bathing, and washing from a source other than the one used for cattle consumption, laundry or bathing, while 40 percent were doing so in the dry season. In the five lowland villages only 2 percent of the households used a separate source for drinking water in the dry season (Kebede 1978: 37). The same careful and deliberate behaviour based on age long experience and social learning is also apparent in women's domestic management of water and waste. This is particularly evident in hardship areas, such as in parts of Somalia, Sudan, Guatemala, Egypt and Yemen and Tamilnadu, India. In Mahweit province, Yemen, women preserve the cleanest and freshest water (preferably from a spring) for drinking, personal washing, cooking, and washing drinking glasses, food and flour grinding, stones. Grey water is saved for washing and rinsing clothes and for watering plants. Water used for washing food is given to poultry and cattle, and water used for clothes washing is reused to clean flours and wash dishes. Habits of recycling of waste and waste water constitute a useful base for demand management and occur widely. In Ghana and Burkina Faso, wells are dug by men but it is the women who decide when to build a new permanent water supply and who contribute to the maintenance (Boesveld 1991). Further experience from Burkina Faso provides evidence to support the double function of women in maintenance and mobilization of male authorities. In Panama, women's involvement in social and economic sectors is booming.

It has already been stated earlier that women's economic use of water should not be underrated. In many societies, women are involved in animal care and also keep several animals themselves to market and to supplement the family diet (Wijk 1985). The animal protein provided is essential, not only for the growth and development of small children and adolescents, but also for adults, because the protein in staple crops is usually of lower quality. Cash income is earned from vegetable gardens, and also the produce provides a source of cheap and essential food supplements for their families. In African countries, home brewing of beer can be of considerable economic importance in both rural and urban areas (Hannan 1995), and is one of the few ways in which women heads of household have been able to earn a living for themselves and their children. The involvement of women in other sectors of water use, such as irrigation, animal care and fisheries, is also underestimated.
Therefore, studies show that for instance, in Sri Lanka and south Burkina Faso, the women made the decisions and carried out the work, but in these cases, the men and women referred only to the involvement of men. The same was also the case in Tanzania. There were very few women on the modern councils to whom women could turn and sometimes do not even know their names. Strong views exist that women should not raise their voices in the council or village assembly. Any issues of water can be raised only by men. At the same time, men and women do not communicate on water. Consequently when water issues are raised, they concern water for cattle rather than water for households. The right to put water on the agenda is exercised mainly by well-to-do-farmers and mainly in connection with water for cattle. (Drangert 1993: 213). In Burkina Faso, insight was gained when the process of management was discussed in a separate women's meeting during project planning (Roark 1984). Women not only do most of the work in water collection, but also take most of the management decisions. They decide which water sources to use for various purposes, how much water to use, and how to transport, store, and draw the water. On the other hand, men decide the location of the settlement, which has a larger impact on water collection efforts (White 1977). In many cultures there are gendered differences in access to information, in the degree of participation in decisions and the weight given to their views (Hannan 1995; Mitchell 1995; Versteylen 1991). Water supply schemes are not normally designed taking into consideration the needs, habits, culture and ethos of the people particularly for women for whom they are meant (Bhatt 1990). In some cultures, decisions are made jointly and women's views and needs have as great an influence as the men's (Rogers 1980). The literature thus indicates that, in various cultures and regions, women and men are both involved in the informal management of water resources. Methods used are user rules and regulations, management by user groups, often of women, and shared management by women and men.

Moreover, as already discussed, studies have shown that women's strategic choices are, like men's, shaped by a complex set of constraints and resources, needs and opportunities. These, again, reflect not only their class position in the labor market (e.g., their levels of skill, the demand for their labor) but also how they are positioned within the communities on which they depend for their survival and how their communities are positioned in relation to others. Apart from class and gender as determinants of access to water, there is the additional dimension of caste, which restricts access to community sources by lower castes on the
ground of ritual pollution. However, there is a broad understanding that water cannot be
denied to anyone—upper castes can claim rights to wells and to the privilege of extracting
water, but not to the water itself (Moench 1995).

Another issue in consideration is one of equity, which is important as it connotes the fairness
in access to water for sustaining livelihood and to equal opportunities and benefits arising from
the development and management of water resource. Gender equity requires paying attention
to the complex relationship between productive uses of water, to the importance of
participation in decision making by both men and women and to equitable distribution of
benefits from improved infrastructure and new decentralized management structures (SIDA
1994). Evolving a gender perspective in water management necessitates understanding the
different starting points of women and men the institutional structures which determine their
roles, rights and responsibilities in terms of their access to and control over resources, as well
as their different needs and priorities and decision-making capacities. These in turn are
differentiated by class, caste, environmental factors and prevailing socio-economic conditions.
In the context of India, within the family structure, the cultural practice of seclusion (purdah),
household composition (joint/nuclear/single) and the gender division of labour influences the
division of water collection work. There are several studies that have shown that girls become
involved in this activity at an early age, depending on the workload and mobility of their
mothers as well as access to and perceptions about the relevance of education for the girl
child. Men in upper caste households (e.g. the darbar community) are largely responsible for
water collection, though their access to transport (e.g. cycles, tractors) facilitates this task. In
joint families the burden of work falls on young daughters-in-law, while single women and men,
especially the elderly or those with no dependents or very young children, are most vulnerable
during water scarcity (Wijk 1998).

Moreover, several studies have also stated the important link between gender and poverty.
Gender equality is essential for empowering women—and for eradicating poverty. Already,
women are on the frontline of household and community efforts to escape poverty and cope
with its impact. But too often they have not had a voice in decision-making—in the household,
in the community, in national and international arenas. Poverty is commonly defined a multi­
dimensional deprivation, or welfare below the threshold that is minimally required to meet
human welfare. Water deprivation is typically one of its dimensions (Koppen 2000). Water has never been a 'free good' for the poor, particularly women, who bear a disproportionate burden with respect to their access and control over water resources. Gender equality is needed, and in some countries still needs, to be part of each nation's strategy for eradicating poverty, both as an end and as a means to eradicating other forms of human poverty. More participation and more private sector are acclaimed as better for efficiency and effectiveness (VROM 1994; World Bank 1993). Yet these give no guarantee that the interests of women and poor households are served. As being poor means needing to be resourceful, poor households have developed ingenious systems to survive in rural areas and in cities (Bhatt 1995; Boesveld and Postel 1991: Rodda 1991; Sontheimer 1991).

Besides the participation of men and women in general, there is also the issue of the balance between male and female participation and between women of different class and age groups. A greater participation of women may be beneficial for the project, for development and for the strategic interests of women, as was shown by Narayan (1993), Koppen (2000) and Versteylen (1991). It can, however, also add to their burden in terms of time, work and financing (Hoffman 1992; Kwaule 1994; Lunoe et al 1994; Wijk 1985; Yacoob and Walker 1991) or result in physical work for women and decisions and benefits controlled by men (Miama 1994). Nor do all women have equal opportunities for participation in project processes and benefits. Poor women do not always have the time and funds needed to take part in projects and project services and so may benefit less or not at all. Illustrative in this respect is that in Narayan's study, which did not control for representative participation according to socio-economic class, beneficiary participation had the least impact on equality of access (Narayan 1993:4). Only an analysis of who, in terms of class, sex and age group, participates in what decisions, work, functions and benefits and at what levels can reveal whether participation and management are gender and poverty specific. A creative commitment to gender equality strengthens every area of action to reduce poverty –because women bring new energy, new insights and a new basis for organization. If development is not engendered, it is endangered. If poverty reduction strategies fail to empower women then they fail to empower society (UNDP 1987).
Early literature already confirms when women are informed and consulted; this has a positive impact on demand for improved domestic infrastructure. Household surveys in Chan Kom, Mexico (McGarry and Elmendorf 1982), Bangladesh (Laubjerg 1984) Indonesia (Dian Desa, 1990) and Pakistan (Kishwar et al. 1990) brought women's interest in improving water supply and sanitation infrastructure to light. In Kenya, members of a Masai women's group managed to collect funds from the sale of traditional beadwork and attract financial support from urban women's organisation. Thereupon their husbands gave a large donation to the water project (Gachukia 1979). In Latin America, which has a long history of demand responsive community managed water supplies, a common role of women is to mobilize this demand. User households then pay some 20 to 40 percent of the investment costs and all to the direct recurrent costs; in time, labour and cash (Edwards et al. 1989; Espejo 1989; Meehan and Viveros, 1982; Wijk, 1985). The cost of insufficient quantity and quality of water for domestic uses is borne disproportionately by women and children due to their predominance in the domestic sphere.

When water becomes an economic good, water rights and land associated with those water rights also gets an economic value. In traditional systems women are more likely to have right of use than right of ownership. Where women formerly had a share in the traditional rights, all legal rights have since come to rest in the hands of the men in the household and clans (Brain 1976; Pala .1980; Rogers 1980). These studies show that in allocating water rights, it is important to ensure that women's needs are also met. This involves:

- Acknowledging customary rights. This includes recognizing use and ownership rights to various sources, for various purposes.
- Protecting water rights and providing adequate compensation for water losses. For example, Mechanized pumps for irrigation and industrial use are draining aquifers in many areas, and no attention is being paid to how this affects the use of open wells and hand pumps that supply water for domestic use.
- Ensuring women's participation in decision-making bodies. If water allocation is left in the hands of public agencies, they must meet the needs of women as well as men. If rights and management responsibilities are transferred to local user groups, they should be structured to include women.
In Burkina Faso, the government failed to recognize the traditional gender division in agriculture and lost the women's contribution until the fault was seen and corrected. In Bangladesh, landless families and women have no water rights but helped by NGOs, have succeeded in organizing and getting water rights and selling water (Koppen 2000).

This study also draws its reference and continuity from the studies conducted on technical aspects of water resource development. In a recent study of Sri Lanka, Professor Rohana Ulluwishewa argues that since women in most of the large irrigation and settlement projects now have to depend for their drinking water on irrigation canals, and pipe lines, ‘technological solutions’ can be viewed as failures in the context of the growing water crisis. In this respect, the knowledge, which the local women have of water management, has enormous potential. Women have their own resources, individually or as a group, which they use, for example, in their own lift irrigation systems, (Povel 1990), Dams (Soon 1983), Rain water tanks (Wacker, 1990). In several Latin American countries, the Philippines and Kerala, spreading connection costs over time gave more women the benefit of a tap in the house. (Serageldin 1994, Wijk 1998). Ulluwishewa gives a detailed description of integrated water resources management in the dry zone of Sri Lanka. Small irrigation tanks served to cultivate rice and as sources for domestic water. The women used botanic means to improve the water quality and managed its quantity and the tree vegetation in the catchment area to preserve the source. In South India, an NGO used gender specific participatory appraisal to map such multi sector resource use at village level. However, the mapping was stopped halfway by the financing authorities, as there was no broad support for such a participatory and cross sector investigation. There are several projects where women are participating in increasingly meaningful ways, being involved at all steps of the project cycle. Where this is happening, women are learning new skills- from basic literacy and numeracy, to plumbing and masonry, are involved in decision making regarding water management, receiving new respect in their homes and communities, and some are even turning water related projects into income generating opportunities that benefit them and their families. In India, in November 1999, in a three day women's hand pump ‘mela’ at Karvi in Bundelkhand, some 50 women hand pump mechanics and masons from all over the country came together to offer their insights on rural water supply and sanitation. Among them were the women mechanics, who have triggered a hand pump revolution in Kamprup district in Assam and in Bayad taluka of Sabarkantha district in Gujarat,
making it their important income generating activity (Gender 21 2000). Renu Gera in her paper "Rainwater harvesting and empowerment of women points to the Nagercoil experiment in Kanyakumari district in Tamilnadu in southern India, where a small group of women gained skills in the construction, maintenance and repair of their own water harvesting structures and were subsequently able to find employment themselves as masons with help from a Non governmental organisation- Centre for appropriate technology. The success of the experiment has spurred similar projects by UNICEF in other parts of India such as the drought prone areas of Maharashtra and Garhwal Hills in Uttar Pradesh in Northern India. (Gender 21 2000).

Management of local learning systems: In every community, there are learning systems by which local knowledge is adapted in the light of new information and transmitted through dialogue and participation. Most often, women are the controllers and purveyors in local learning systems related to water, health and sanitation (Roark 1980). Reporting on local learning systems dates from many years back to the present day and reveals the persistence and validity of such systems. Ulluwishewa (1994) and Bhatt (1995) for example, point out that in the dry zones of Sri Lanka and Gujarat, India, women continue to use indigenous knowledge systems on managing water quantity and quality.

Studies have also shown a strong link between education and training as being very essential for better water management, provision of safe water, water saving, and efficiency. This aspect also emerges very strongly in this study, however the fact that these training programmes can also impact on governance, is another new aspect added on to this perspective. Educating women and girls is considered especially important as it is bound to have a positive influence in the sector, with direct consequences for family health and welfare. Almost all sector programmes should include a training component, although the type of training, its objectives, and the target groups may vary. In the community-managed water programme in Kerala, India for example, human-resource development is approached in two ways: through upgrading skills or developing new ones through short-term training; and though providing new experiences giving support people to take on new roles and new responsibilities. Training is given to male and female water-committee members, stand-post attendants, schoolteachers, nursery teachers, health personnel, and local government staff (Kurup 1996).
In Guatemala, sector institutions train water committees in support of community-managed water systems. Reasons for training women in local maintenance include the direct concern and personal interest of women in their water supply; their regular visits to distribution points; the compatibility of preventive maintenance and user education with the traditional tasks of women; easier communication between women caretakers and women users; their greater sensitivity to social pressure from other women to do a good job; the importance of health aspects; the lower career orientation and labour mobility of women; and recognition that training in modern technology is for their age-long contribution to household’s water supply. (Wijk 1985). Women are managers of water in their homes. They decide now to obtain water, carry it, use it, and distribute it. They pay for water. They are the target groups of water vendors.

In the water supply sector, educational programmes and training aim at better performance of all those involved, and at sector efficiency and progress. These programmes should accompany all phases of interventions in the sector, and it has been recommended that the education and training of users continue even after project completion, both for technical continuity and for the impact on environmental health (Wijk 1998). Traditionally, women do not receive special information, training, or education on issues related to the water supply sector. Although women have a crucial role in the provision of domestic water and care of the environment (Bhadra 1992; Souto-Maior 1993; Wijk 1998), when new installations for water supply were provided, information on the new technologies was passed on only to men. Women were kept out of the information and training circuit, not for technical or educational criteria, but primarily for social reasons (Harkness, quoted in Wijk 1985: 170). However, it gradually became evident that new arrangements for the transmission of information and knowledge should accompany the increasing sophistication of water provision, and that these new arrangements should include training and education for both men and women (Abdullah and Boot 1989; Jongepier and Appel 1995; Tunyavanich 1987; Wijk 1993 1995). In these new arrangements, women are not seen as mere users and beneficiaries of water supply facilities. Women are gradually being recognized as actors and agents of change and at the community level there is now also an increasing number of female planners, supervisors, managers, operators, technicians and decision-makers. This development has been accompanied by a gradual shift in the sector’s formal and non-formal education and training activities, and it
includes specific arrangements to accommodate and support the new roles played by women (HESAWA 1991; Sumbung 1990). Although women are informally involved in the local management of traditional water sources, when an external project comes into the community and water is provided, women are often excluded from management tasks. In such cases, it is important to obtain the support of local leaders to involve the women in local planning and train them for managerial tasks.

The line of evolution tracing education and training of men and women in the water supply and sanitation sector is clearly given by Carolyn Hannan-Andersson (1995). When women were merely users of water and no technology was available for making their task an easier one, some attention was available for making their task an easier one, some attention was given to them in programmes through health and hygiene education. When new technology was introduced and payment became involved for the operation and maintenance of the new technology, men became interested. All the information and the new knowledge were then transmitted to the men, who also profited from knowledge and information from their broader circle of contacts outside the household. This had a negative effect on the position of women, who, despite their crucial role in the sector, were bypassed by the new technology trends and became more dependent on the knowledge of men in their role of water providers and water managers. It soon became clear that for a better provision in the household, women also had to take up new roles in the operation and management of the new facilities, and efforts were then made to train them as caretakers and pump mechanics. Men raised opposition once women could compete with men in a broader sphere. Even women themselves did not see a role outside their community circle. Gradually, women started to take part in planning (for example in the sitting of facilities) and decision-making in their communities. This required special training for women and different strategies had to be developed, which included gender sensitization of both men and women. When low-cost technologies and decentralization of responsibilities gained support and women’s involvement was increasingly required, a condition for a gender approach became even more evident; if women’s and men’s needs and roles are not taken into consideration, and if appraisal and consultation does not involve men and women at the local level, the projects may worsen the position of women (Hannan-Andersson 1995).
Another reason for training women in water-related technical skills is that in general they are more accepted in the households for carrying out repairs than men. The acceptability of their presence in private compounds and their commitment to work make them excellent water workers (Wijk, 1998). Women are also valued for their ability to care, they are at home during the day, and can make arrangements to supervise the work; they have an ability to check the technical quality of the work being done (Wijk 1985). Women have a potential for development which should be used and from which the sector would greatly benefit; they will also be more motivated in training other women as women can, with more ease, transmit knowledge and skills, and better influence and educate other women on specific sector needs such as the proper use of pumps and water use (Sharma 1989). Male emigration has created new roles and responsibilities for women (International Labour Office, no date). They should therefore have the knowledge they need to operate and manage their water supplies and facilities on their own. In some situations where extensive labour migration of men occurs, or where women groups have been the major force behind the village water supply, one should consider training women for technical tasks as well.

There are examples come from Honduras, where SANAA, the national water and sanitation service, trains women of water committees on financial aspects, and from Guatemala, where the NGO Agua del Pueblo organizes training for local water committee members on record-keeping, basic accounts, planning, communication and leadership (ILO/Turin Centre et al. 1991). Special management training for members of local management committees is being developed in water supply programmes. In Chile, the national rural water supply programme had addressed the lack of training and expertise in local management by getting social workers to give on-the-job training to water committees. This had quite a successful result: after seven months, local water boards were able to solve their own problems, which included administration and finances (Luz Alvares, quoted in Wijk 1985).

Educating and training local women is not only important for the efficiency of projects and to meet women's needs; it has also to do with the need of having more women in decision-making and at policy level positions in a sector where women play such an important role at local level. This is especially important due to the new requirements of a demand-driven approach. The benefits to society of training women include society getting a more positive
attitude towards educating girls if these women perform well in their tasks. It also makes women gain confidence, seeing they can do what is traditionally regarded as men's work. These are intangible benefits (Jonsson and Rudengren 1991) and are of great relevance to society, and to the women themselves, provided they do not lead to the withdrawal by men of other responsibilities, such as contributing to the costs of maintenance and repairs.

A participatory approach is of help as well, discussion in small groups, role-play; pictures, games, etc., where the more shy participants get a chance to speak. Extra training for women should be organized if they need help to catch up with the men. Women in training should realize they have already many skills, that their opinion is valid and should be given a more positive self image (Grift 1995). Gender awareness is raised not only by formal training; there are many other channels or possibilities for introducing gender awareness. For example, when women participate in monitoring or evaluation, depending on what is being addressed and with which objective, they may become better aware of their own situation, their position in relation to men, and their possibilities. The activity can be an eye-opener.

Topics for this training would include: Personnel and basic accountability, functioning of service and tariff setting, water committee status and legal documents, reporting on construction, drinking water regulations committees. Women also need to be trained as members of water committees. However, it is sometimes culturally more acceptable for female members of local committees to be responsible for women-specific tasks—such as health aspects, water/facilities use aspects, communication, collection financing. Practically and strategically, women may face a number of constraints to taking part in training. Experience teaches, however, that such constraints, when recognized, can be overcome. Opposition from male relatives to the training of wives and daughters has generally been overcome by obtaining support for male leaders and by involving husbands in some of the activities. Other possible ways of overcoming opposition include the preparation of flyers, and poster campaigns showing benefits to husbands and fathers, and encouraging the elderly and more experienced men to also participate in the women's training. Locally trained women and men may have more effective approach in communicating with the communities. They are more sensitive to combining the knowledge they have acquired with the ways and language communities are used to. If women, for one reason or another, are not to be trained for
managerial tasks, operation and maintenance, they can be asked to indicate who are the most suitable men to be trained. For gender-balanced training it is not sufficient to have the same number of male and female participants if women do not have any say. When community women will not participate in training and men will, separate training for men and women may be one solution.

Monitoring and evaluation can also be tools to provide women themselves with information on their situation; and to better integrate them in water and in mainstream development programmes and projects, aiming at equity, shared benefits, project efficiency and empowerment, alongside men. In this, indicators for monitoring and evaluation should be gender-specific and go beyond an assessment of conventional benefits for women; they should include information on access to and control over resources, and decision-making and leadership; changes in status in the community; changes in status in the community; changes in work situation; possibilities to sustain achievement; and possibilities to apply awareness and skills developed through the water supply project in other areas of work and influence (Ploeg and Wijk-Sijbesma 1980). When women and men are called to perform new roles, their training should accompany this shift in their situation. This may occur, for example, when women are needed for more technical or managerial tasks and men are called to work in non-technical tasks. Agencies emphasize the need for technical skills in recruiting staff, instead of valuing social and managerial skills and the ability to communicate with community members (Wijk 1985).

The training and education of girls and women for new responsibilities, roles, and decision-making help them to meet their practical and strategic needs (Doyle 1995). As agents of change, it is important that they have access to all levels of education and attain educational qualifications (United Nations Commission on the Status of Women 1995). This will not benefit girls and women alone. It will also benefit boys and men, as it will ultimately contribute to a better living for families, with positive consequences for both sides. In the sector’s labour market, wages are in general related to the type of training and education received, and it is reasonable that both women and men have the possibility of benefiting from a valued position. Besides, 'gender inequality is not only a matter of justice but of good economics as gender inequalities hamper growth' (World Bank 1995a). Although a gender balance begins to emerge
at the lowest level in the water sector, women are also needed at municipal, provincial and national levels of decision-making and policy development—a sphere where they are little represented. A recent example comes from the Global Water Partnership Consultative Group meeting held in Marrakech in March 1997. Of the 115 participants, only 15 were women. This is a common situation at international fora, where representatives of leading water organizations are present, and reflects a lack of gender balance in decision-making at higher levels (Athukorala 1997).

Participatory evaluation with a gender angle will assess whether and to what extent project resources and benefits reach both men and women. An example is evaluation through village maps, or photographs taken at various stages of the projects, though which both men and women can analyse their roles and activities in the project. Participants see themselves and understand from which activities the one or the other was excluded, when they were overburdened, etc. In one workshop organized by ‘Promotion of the Role of Women in Water and Environmental Sanitation Services' (PROWWESS) (Narayan 1993) such an exercise led to a reconsideration of the exclusion of women in the agency training programme as technicians. Can women find employment or work after their training? Participants in the courses on plumbing given to women by EMOS, the public water company of Santiago, Chile, declared that the course had changed their lives, that they felt more independent and were able to generate income for their family through services rendered to their neighbours. The water company itself sends leaflets and brochures containing technical information, for example how to economize on water and make simple repairs, targeting all members of the families, and ultimately also involving husbands and children.

The increase in decentralized services and the need for users—men and women—to participate in the operation and management of community-based projects has led to a shift in the recruitment of staff by water supply sector agencies. This is occurring in Brasilia, Brazil, where the Condominial Sewerage Programme of the municipal water company is giving more attention to the recruitment and training of staff interested and motivated in working with communities, rather than to technical skills (Borba 1996). As many of these staff are women, the balance between women and men in the water sector has undergone a shift. Besides a better balance in staff roles—men gradually taking up also social roles and women also taking
up technical roles—one can also note a shift away from gender-stereotyped training. Technical training for water supply is being given to both male and female community development workers or promoters.

A study by Narayan (1995), based on the results of 121 World Bank projects, contains strong evidence on how the participation of women increases the effectiveness of projects in terms of better quality of projects design, implementation, operation and maintenance transition of operation and maintenance to local groups; maintenance after one year; and reliability of water systems (Narayan 1995). Women who turn into pump mechanics get extra income and improve their status, as has happened in some projects. On the other hand, it increases their workload, as they have the double load of a paid job outside the house and an unpaid one within the household. Despite this workload, their work is valued as there is a much lower rate of breakdowns in pumps maintained by women than in those maintained by men. Also, the duration of pump breakdown may be smaller among female mechanics (Jonsson and Rudengren 1991).

Decentralization and Good Governance of water

The present study basically is in agreement to the above analysis and further builds on these themes by including the governance perspective in the process of decentralisation. Good governance of water resource would entail gender equality especially in terms of ensuring women’s participation of all class and the poor, which this study has also brought out.

Decentralization and good governance refers to the reorganization of authority so that there is a system of co-responsibility between institutions of governance at the central, regional and local levels according to the principle of subsidiarity, thus increasing the overall quality and effectiveness of the system of governance while increasing the authority of sub-national levels. However, experience suggests that decentralization in itself is no guarantee of good governance but decentralizing governance can become an effective means of achieving critical objectives of sustainable human development and greater socio-economic equity, especially between men and women and safeguarding the environment. Therefore, decentralization is expected to contribute to key elements of good governance, such as increasing people’s opportunities for participation in economic, social and political decisions.
and enhancing government responsiveness, transparency and accountability. It is also recognized that improved governance will require not only strengthened central and local governments but also the involvement of other actors from civil society organizations and the private sector in partnership with government at all levels.

While water management is one of the central themes in this study as also seen in the studies conducted in the past, much still remains to be learnt with regard to the impact decentralization has on sustainable development, especially poverty eradication and equity building and water governance in the Indian context. This study takes into consideration decentralisation in Indian context and its challenges. There have been reports for example, even where central control of resources and decision-making responsibilities is devolved to local bodies (Panchayati Raj Institutions), there are many cases where local officials have exercised this control and authority to their own benefit instead of perceiving their new positions as managers of local resources on behalf of new citizens. In many cases central governments have kept the most buoyant sources of revenue for themselves and local government lack adequate powers for tax collection and other forms of revenue generation. In fact, despite varying levels of decentralization, the accountability of local officials has often remained upwards, towards the center, rather than outwards to the citizens. Local organizations therefore, continue to act as bureaucratic instruments of the center rather than as generators of alternative values, preferences and aspirations. Local leaders are seen by central government officials as merely communicators and solicitors for support for national policies rather than channels through which the conditions and needs of the local communities can be articulated to central and sub-national planners and policy makers or as mobilizers of local resources for promoting development from the ‘bottom-up’. (Panchayati Raj Update 1998, 1999 and 2000)

Finally where devolution of central government activities has been attempted additional problems have arisen such as reinforcing provincial inequalities and disparities in levels of government. The absence of key elements of good governance in all these situations are: lack of participation, responsiveness, partnership, community involvement, transparency and so on. Therefore, the capacities for constructive, open, participatory decision-making planning and action for partnership and collaboration process, skills for community self-reliance in all aspects of development management are of critical importance in this study. Similarly, the
need to develop institutional capacities for partnership by fostering trust, a shared vision, a collaborative spirit and the evolution of a clear framework of institutional provisions for sustained efforts to work together and share responsibilities have also been brought out. The local community focus provides the scale within which the micro-environments that determine the well being of the people can be addressed most effectively by themselves. Community empowerment within a framework of multi-level articulation of priorities and strategies especially related to gender and class is thus a fundamental building block of decentralized governance as seen in this study.

The worldwide search for factors that determine the sustainability of water resources has led to the universal recognition of the importance of participatory approaches. Following this line of argument this study delves into the issue of governance with people's participation, which includes both men and women equally. The issue is of governance of dwindling water resources, which has to be taken up at local levels by the communities and the local councils i.e. the panchayats in the Indian context. The key concern for the governance of water resources remains mobilisation by local action for bringing it under societal control. For mobilisation we need organisations between the state and the users who can effectively translate and exchange views, to ensure that users can manage water, as they need for livelihood security (Cleaver 1998). Therefore, to tackle the social, economic and gender issues confronting the communities, the local political bodies need to draw on the resources of other actors in the private and voluntary sectors. This idea of Cleaver has found resonance in this study as well. The role of the government as that of a facilitator, a catalytic force for enabling the innovative sharing of responsibilities and creating enabling environments for the effectiveness of the people and partners is considered crucial in pursuing their legitimate objectives. Therefore, governance as an interactive process involves various forms of partnership between gender, caste, class, and existing groups and institutions. Studies on water management have talked about participation of water stakeholders in decisions on water works, operation rules and maintenance arrangements. "For participatory planning mechanism with other local level institutions, attention is required to keep the participatory process manageable through time and cost. Attention is also required to categories of persons that traditionally though informally had an important role but tend to lose out in a formal process. It also requires facilitating the transfer of water management from a purely technical to a societal
affair; to generate new viewpoints and new centers of innovation. This has the effect of strengthening non-traditional centers of knowledge/interest in water management, such as local government, Non governmental organisations (NGOs) and associations". (Vermillion, 1995; Subramanium et. al. 1991). Studies have shown that non-governmental organizations, for example, are increasingly seen as effective mechanisms for targeting disadvantaged groups they are often seen as a natural partner for governments seeking innovative ways and means of improving service quality and delivery. It is worth mentioning here that in this study private sector participation has not found much significance especially in water resource development in rural areas. The Nagercoil experiment demonstrated that program viability and gender sensitivity could go hand in hand provided catalysts such as an effective local NGO exists. In Bangladesh, landless families and women have no water rights but, helped by NGOs, have succeeded in organising and getting water rights and selling water (Koppen 2000). Several NGOs in India have played an important role in facilitating the importance of different roles, motivations and experiences of cooperation between men and women in all such movements in the process of collective action. Today NGOs continue to be involved in rural water supply activities in several states though the more successful examples of NGO involvement are within donor-assisted projects where the institutional contact is more conducive to their working. In these projects NGOs have been mostly used as the intermediary between the community and water agency, facilitating project activities related to community mobilization, cost sharing, health education and other soft areas for water supply. Other noteworthy NGO activities have been seen in the area of watershed development where NGOs have been successful in taking a holistic approach to water resources development. By and large NGOs are reluctant to work in government schemes considering government procedures cumbersome. However, mostly studies conducted in India about role NGOs have been playing have shown in their analysis a lack a gender perspective. These aspects have been discussed in much detail in the Indian context in the chapters ahead