CHAPTER 2

EVALUATION OF DONOR AID, RURAL DEVELOPMENT, RURAL WATER SUPPLY AND SANITATION - POLICY AND PROGRAM
Section 1. Evolution of Donor Aid Policy

2.1. Donor aid- trends and issues

This sub-chapter reviews the present aid trends and issues particularly the role of technical assistance and government organizations, which are two of the main actors in the donor system in rural water and sanitation sector. A useful summary of the twenty-five years of International cooperation in water related development assistance compiled by Grover Brain, gives an overall view of the sector development for water management in developing countries over the last quarter century. Official, large-scale assistance for developing countries from industrialized nations grew sharply after World War II. During this post-colonial period the United Nations and its associated multilateral agencies emerged, as did national organisations providing bilateral development assistance. Non-governmental relief and development agencies also flourished. Water development projects have always been featured in international assistance programs. Colonial governments developed water infrastructure in their overseas territories; and missionaries often provided health and social services, including water supplies for people, animals and crops.

The World Bank’s first water supply and sanitation loan was made in 1961. Regional development banks, created in the 1960s in Latin America, Asia and Africa also supported water projects, as did the bi-lateral development agencies that began operations in the 1950s and 1960s. By 1972 there was already a plethora of external support agencies (multilateral, bi-lateral and non-governmental) actively providing assistance for water sector activities.

Early water development assistance tended to be project-specific and somewhat fragmented, with little exchange of information and experiences between countries and among agencies. A more global and comprehensive view of water management and related assistance began to take shape in the
1970s and subsequently has become stronger. Much of this progress was discussed at international conferences. The 1972 UN Environment Conference in Stockholm encouraged participants to consider the creation of the United Nations Environment Program (UNEP), which set up headquarters in Nairobi, to make environmental principles more operational. Vancouver hosted the first UN Conference on Human Settlements, Habitat, in 1976. Among the themes emphasized at this conference was the need for water supply and sanitation services for the rapidly expanding populations in developing countries. The UN Center for Human Settlements (Habitat) was subsequently established in Nairobi. In 1977 the UN Water Conference was held in Mar del Plata in Argentina. This first global conference concentrating on water looked at all aspects of water management and tried to draw attention to problems that were becoming increasingly serious. The conference did not lead to the creation of an international water agency, as some had expected, but did produce the Mar del Plata Declaration, which in turn led the UN General Assembly to proclaim 1981 - 1990 the ‘International Drinking Water Supply and Sanitation Decade’. The Mar del Plata water conference, and the naming of the 1980s as a decade for action, led directly to two important institutional arrangements for international cooperation on water supply and sanitation; the UNDP-World Bank-Water and Sanitation Program (WSP); and the Water Supply and Sanitation Collaborative Council (WSSCC). The UNDP-World Bank-WSP originated a series of applied research projects co-financed by the UNDP and bilateral agencies. These projects were implemented by the World Bank.

The Government of India hosted a global water supply and sanitation consultation in November 1990 to share experiences at the conclusion of the 1981 -1990 decade. The experiences of the 1981-1990 decade, particularly the development of WSP and WSSCC, along with experience by several related international organisations involved in cooperative arrangements for water used in agriculture, eventually led to the development of the Global Water Partnership (GWP) and the World Water Council (WWC). A World Water
Council was first proposed at the International Conference on Water and the Environment that took place in Dublin in January 1992. The Dublin conference set four guiding principles on ‘Integrated Water Resource Management’ that have deeply influenced international water policy.

2.1.1. Rationale for International Cooperation

In order to understand the driving forces and underlying trends that have influenced international cooperation on water during the past 23 years since the beginning of IDWSSD (1980), an understanding of the following four factors is essential. These factors are interrelated and are driving the trend toward continuing and increased cooperation. But their relative impact and consequences are difficult, if not impossible, to predict.

a) Increasing pressure on water resources

Population growth and rising living standards are placing increasing demands on the finite amount of fresh water on our planet. The extent of this varies widely across the globe. An overview of the world’s freshwater resources indicated that about one-third of all low-income people live in areas of moderate to severe water stress. By 2005, it is anticipated that two-thirds of low-income people will face moderate to severe water stress. There are many consequences of the increasing demands for limited water resources. Competition for water is increasing, both among water using sectors in any given region and among regions in different parts of a river basin or groundwater aquifer. This competition has huge ramifications for water policy particularly in countries with high water stress. Because of the growing pressure on water resources, societies will have to address the resulting issues more holistically.

b) Changes in Official Development Assistance

In historical terms Official Development Assistance (ODA) is roughly half a century old and is already being transformed as the global environment changes. There are two important perspectives to consider the supply and the demand for ODA. Multilateral channels (international agencies, primarily the
UN family and international development banks), and bi-lateral channels (country-to-country) have been used by ODA. Bilateral assistance can be between governments directly or through commercial or other non-governmental intermediaries. The supply trend for ODA has been declining in recent years. Development assistance usually concentrates initially on relief services, as the recipient country emerges from colonization. Most ODA providers prefer an orientation towards longer-term development, frequently concentrating in a few sectors. ODA in the water sector has usually been project-specific at first. Gradually, most development agencies want to influence policies and programs of the recipient governments that will sustain longer-term progress, with the implicit expectation of diminishing ODA. This desire to influence sectoral policies combined with diminishing ODA resources and increasing funding requirements for water related services, encourages ODA providers to operate cooperatively rather than individually. A factor influencing ODA for water is the growing experience of development assistance agencies.

c) Evolving public and private sector roles

The devolution and decentralization of political power from central governments to state and community based local self government accord with the second Dublin principle of managing water at the lowest appropriate level. Concurrently, public sector agencies are increasingly recognizing that their role is one of facilitator, rather than service provider. The public sector is concreting more on developing an enabling environment in terms of policies, laws and regulations, including key financial regulations, while consumer groups and other responding to market forces play stronger roles in providing water sendees. The impacts of these fundamental political trends vary considerably. Of particular importance are the willingness and capacity of water consumers to play larger roles in determining the standards of service they receive. This devolution of power and control needs to be offset by government policies and regulations to ensure equity and efficiency in water use over the entire basin or aquifer. The financial dimensions of these institutional changes will be crucial
and users will be expected to express their demands for water services through payment systems.

d) Strengthening interest in partnership

The trends discussed above are all contributing to the need for more effective partnerships between the many constituencies involved in supporting water programs in developing countries. Ministers at the 1994 Noordwijk Conference stated ‘water supply and sanitation sector has, in fact, led the way in development circles in establishing a unique and well-respected collaborative mechanism for sector professional at the international level’. The key stakeholders have consciously supported the continuation of WSP and WSSCC. It is clear that the recent evolution of both WWC and GWP has been strongly influenced by antecedents in the water supply and sanitation field.

2.1.2. Basic Needs Approach

Streeten\textsuperscript{24} stresses that ‘basic needs’ is not a welfare concept; but that improved education and health care make a major contribution to increased productivity. A basic need approach tries to ensure that all human beings have the opportunity to have full lives. The approach has three objectives. Firstly, that the poor have real incomes, adequate enough to buy necessities such as food, clothing, household goods, transport, fuel and shelter. Secondly, that the poor have access to public services such as education, health care, water and sanitation. Thirdly, opportunity to participate in formulation of social development projects by the beneficiaries utilizing the local capacity and resources. Streeten (in the meeting on Basic Human Needs in Development Countries held in 1981) concedes that the definitions of basic need sectors is somewhat arbitrary. The main elements of a ‘cross sectoral’ approach are unquestionable: nutrition, health, education, water and sanitation and shelter. This classification of basic needs is compatible with the structure and organization of many Government Ministries and with the sector lending aids programs of development agencies and donors. However, it is ironic that few of
these programs are linked with other related programs. The rational for these basic needs categories is summarized below:

The need for food or nutrition is perhaps the most basic of all the needs. The poor in the developing countries spend about 70% to 80% of their total income on food. Lack of adequate food not only makes people hungry and less able to enjoy life, it also reduces their ability and by causing apathy, their willingness to work. Education also has a crucial role in the development process. It improves living skills, increases productivity by improving work skills, and lowers reproductivity by raising women’s status. Perhaps the greatest value of education at low levels of living lies in its contribution to meeting other basic needs.

Adequate supplies of safe water and sanitary systems of waste disposal are important elements in human health. According to the World Health Organization, diseases related to unsafe water and poor sanitation rank among the top three causes of morbidity and mortality in most developing countries.

There is a need for shelter of a reasonable standard to protect health and provide a tolerable environment in which people can live.

In summary, basic needs can be considered as a liberal response to the inadequacies of the modernistic approach that argues for reducing the levels of poverty by reaching the poor first whilst contributing to overall growth and development. Basic need de-emphasizes the top down donor system approach and perceives the need to strengthen the government and community systems. However, in practice, the major drawback of the basic needs approach is its demand for successful coordination of multiple sectors, systems and actors. India being a welfare state, provision of basic services for quality of human life was reflected in the form of the Minimum Needs program launched during Fifth Five Year Plan Period, 1974-79.
2.1.3. Primary Health Care - Rural Water Supply and Sanitation

To discuss issues related to ‘Primary Health Care’ and to prepare Action Plan in order to achieve the goal of ‘Health for All’, delegates from 134 Member States of WHO and other agencies and non-governmental bodies assembled in an international Conference at Alma-Ata in the then USSR in 1978. The Primary Health Care (PHC) philosophy draws heavily on the concept of basic needs, and has formed an effective link between the health, and water and sanitation components of the basic needs approach. The World Health Organization has defined health as ‘A state of complete physical, mental, social and spiritual well-being and not merely the absence of diseases or infirmity’.

On this broad definition, health can be identified as the primary basic need, all the other basic needs components being ‘inputs’ into the process that produces good health. Primary Health Care is based upon a move away from centralized curative forms of treatment to decentralized preventive form of medicine; it provides for community level health care facilities and extension services. PHC may include investments in water supply and sanitation improvements, together with immunization, maternal and child health (MCH), family planning and nutrition program. The major objective of this approach is to provide access to basic preventive health care to a wide range of population within limited economic resources.

In parallel with the IDWSSD, the 1980’s and 1990’s are designated as the Health Decades, the major theme of which is ‘health for all by the year 2000’. Primary health care like basic needs represents a change in aid philosophy that provides a new balance between the systems involved by de-emphasizing the centralized donor - western approach and recognizing the needs to reorient the government system and involve the community.

2.1.4. Appropriate Technology Movement

The use and application of ‘Appropriate Technology’ gained increased recognition along with the development of the ‘Basic Needs Approach’ and the
Primary Health Care Philosophy’. The advocates of ‘appropriate technology’ believe that technology choice is a strategic decision in all development projects. It is believed that alternative technology options are available for achieving particular policy objectives and that choice of technology is determined by the developmental goals that are being sought.

Water supply and sanitation facilities are basic needs, satisfying them represents meeting minimum requirements for survival. Thus, it is essential in water supply and sanitation, perhaps more than in any other sector, that issues of equity be faced squarely. Equity, therefore, also requires that appropriate technologies be chosen. The best technology is one, which is people and environment friendly and sustainable in rural environment and should be based on meeting the effective demand at the lowest economic cost. It should be easy and affordable to operate and maintain at the village level.

The choice of a technology for a certain location depends mainly on:
- easy to operate and maintain at the user level
- affordable and socially acceptable by the community
- resource available (fund & material)
- easy availability of spare parts and tools
- environmental and hydrological conditions friendly according to IRC

The move towards appropriate technology also represents a move toward strengthening the government and community systems by providing tools for their development and indicated a move away from top down donor system control.

2.1.5. Present views on aid policy and issues

Donor philosophies such as ‘basic needs’ impinge on their perception of the common task environment of development and the process of transforming resources to projects, as illustrated in figure 3. In the early 1980’s a number of donors became increasingly concerned that the current focus on poverty and equity was not sufficient to stimulate the developmental process. This has led
to a differentiation in the aid strategy and policy adopted by the western donors during the past decade. The World Bank has led a movement of ‘economic liberalization’, by trying to improve the efficiency of the economies of developing countries through pricing policies and other interventions, particularly reorganization and reorientation, policy reform and administrative capacity building. Britain and the USA are amongst the followers of the World Bank’s lead, and are thus not major supporters of the IDWSSD. Whereas, donors such as the Nordic Countries, Germany and The Netherlands continue with aid programs aimed at poverty relief, and are thus the prime supporters of the ‘Water Supply and Sanitation Program’.

The 1980’s also saw the aid debate in the political arenas of the west turn away from increasing aid flows. The socialists argue that by redistributing money to under-develop and developing countries now, it becomes more difficult for the poor to assume ‘power’ later as they become entrenched in power regimes that are intent in continuing to exploit them. However, despite the macro economic and political arguments, aid programs do continue and the issues presently being debated by the designers of these programs are centered on what should be the role of the various systems in the development process, that is, governments, donors, and people themselves.

It is also becoming apparent that donor pressure and precedent for major economic and institutional reforms in the drive for economic liberalization and administrative capacity building, has had limited success. These recommendations pay little regard to the political and bureaucratic realities of the countries in which they are to be adopted, and of the government officers who have to implement them. Within the context of the water sector supra systems model, the traditional forms of donor ‘technical assistance’ and its related professionalism, and the emerging role of ‘non government organizations’ as an alternative aid mechanism are worthy of closer examination. These are two of the main actors in the donor system, which are of particular interest.
2.1.6. Donor’s Technical Assistance

One of the major features of many multilateral and bilateral aid programs has been the provision of experts or professionals on a short-term basis (typically ranging from few weeks to few years), to assist developing countries. These experts who have been the main actors in the donor system for some time are most often in the form of consultants who provide a specific service for a government body, in the form of individuals who are attached as advisers, or line managers. The general concerns that have been raised concerning technical assistance include: ♦ That the personnel often see their first loyalty as being to the parent donor, and they are used by the donor to ensure timely and proper disbursement of aid funds rather than to build capacity within the government to undertake the function assumed by the expatriate. ♦ That the personnel often lack the relevant knowledge, skills or appreciation of the local environment, culture, social service delivery mechanism, institutional framework to allow them to design and implement development programs; this is exacerbated by short project cycles and discontinuity of staff. ♦ That the consultant engaged by the donor determines the extent and nature of technical assistance to be provided and not the needs of the specific developmental activity. This leads to poor project performance. ♦ That the use of expatriate consultants is an effective mechanism for recycling aid funds back into the donor’s own economy. ♦ That the engagement of expatriate experts inhibits the development of local managerial skills and their self-reliance.

Consultant often plays a major role in the aid process. However, they tend to reinforce the interests of the donor rather than the recipient government. By contrast, advisers/experts associated with country specific UN Agencies have a much broader role and often work closely with a government for a longer period with open-ended responsibilities. Advisers have a strong incentive to maintain good relations with both camps, which often means keeping a low profile and therefore having less impact on the development process.
Within the water sector a major concern is the domination of the engineering disciplines in technical assistance programs till recent time. The engineering experts, or professionals employed by the donor or as consultants and advisers, often bring with them a technocratic approach and reluctance to interact with other disciplines. This tends to reinforce sectionalisms, reduces effective coordination and almost invariably leads to the design of vertical projects with poor social components. This is a good example of the groups and boundaries established by professionals in order to maintain their own perceived interests, often referred to in organizational theory.

2.1.7. Non Government Organizations- The voice of the people

The second important debate that is presently taking place in aid circles concerns the role of private voluntary organizations or non government organizations (NGOs). Although the scale and structure of NGOs is diverse, two themes are common in their approach; self-reliance and people’s participation. As a product of this approach NGOs have served as a ‘voice of the people’, which has sensitized developing country governments and aid agencies to the needs of the poor. They have also taken a lead in demonstrating that rural development projects in which communities are fundamentally involved are more likely to achieve greater success than those projects, which do not. A growing number of developing country governments value the contributions of NGOs to their development programs, as demonstrated by the establishment of special offices to foster and coordinate activities as in the case of CAP ART\(^{30}\) under the Ministry of Rural Development in India.

In the water sector, as project design trends move towards community involvement, and away from master plans and vertical projects, the role of NGOs in project implementation is becoming an important factor. They generally provide a valuable counterweight to the more conventional technical assistance approach. NGOs are becoming an important actor in the donor system as they can form an efficient boundary-spanning device between the government and community systems.
2.1.8. Summary

It has also been affirmed that the International Drinking Water Supply & Sanitation Decade of the 1980’s is a product of the trends in aid philosophy which have moved from the post World War II. Earlier the focus was on development of water infrastructure by the Colonial Governments in their overseas territories. These were a part of health and social services, including water supplies for people, animal and crops. During the first UN Development decade of the 1960’s, it was found that aid was not reaching those most in need - the poor. To the evolution of the basic needs and primary health care approaches of the 1970’s, both of which were perceived to have essentially water and sanitation components. The launch of the IDWSSD in 1980s was reinforced by appropriate technology movement that had a special significance for the water sector. That is, the move away from western hi-tech water treatment plants to the development of appropriate technology such as hand pumps and sanitary wells. However, as aid trends continued to evolve through the 1950’s, the donor projects and programs launched in the earlier part of the decade, including those falling under the IDWSSD umbrella, are now becoming the subject of close scrutiny and international debate. Two specific issues arising from the above debate are pertinent to the examination of the donor system.

♦ First, the use of advisers and consultants in aid projects. Technical assistance to developing countries has been for some time a major component of most aid programs (or actors in the donor system). However, the questions presently being posed are. What is its real purpose and value - do the advisers serve the donor or the country? How best can it be structured - should the advisers be line managers or facilitators? Who are the most appropriate people to offer advice - is the typical adviser able to address the real problems and issues given his professional training and biases?

♦ Second, the potential role of non-government organizations, which are relatively new actors in the donor system. There is a growing consensus of opinion which believes that because of their unique character NGOs are able to
act as intermediaries in the aid processes by filling a perceived void between donors, developing country governments and the people (beneficiaries). Although the scale and structure of NGOs is diverse, two themes, which are common in their approach, have led to the successful implementation of a number of projects, which have directly benefited people at grass roots level. These are self-reliance and people’s participation. This approach now serves as model for many project designers.
Section 2. Evolution of Rural Development, Water Supply and Sanitation Projects

2.2. Rural Development project design

The approach to reduce poverty under the rural development program has evolved over the past 50 years. In the 1950s and 1960s many viewed large investments in physical capital and infrastructure as the primary means of development. In the 1970s awareness grew that physical capital was not enough and health and education inputs are equally important. The World Development Report18 1980 articulated this understanding and urged that improvements in health and education were important not only in their own right but also to promote growth in the incomes of the poor. The 1980s saw another shift of emphasis following the debt crisis and global recession. The World Development Report 1990 emphasized that poverty proposed a two-prone strategy: promoting labour-intensive growth through economic openness and investment in infrastructure and providing basic services to the poor people in health and education.

In the 1990s governance and institutions moved towards center stage- as did issues of vulnerability at the local and national levels. It proposes a strategy for attacking poverty in three ways: ♦promoting opportunity ♦facilitating empowerment and ♦ enhancing security. An important reason for considering a broader range of dimensions and hence a broader range of policies- is that the different aspect of poverty interacts and reinforces one another in important ways. These mean that policies do more than simply add up. Improving health outcomes not only improves well being but also increases income-earning potential. Increasing education not only improves well being it also leads to better health outcomes and to higher incomes. Understanding these complexities is essential for designing and implementing programs and projects that help people escape poverty.
2-2.1. Rural Water Supply and Sanitation project design

Recent literature review on Rural Water Supply and Sanitation (RWSS) development program and project design revealed that RWSS Sector has evolved in parallel with the evolution of the design of rural development projects. Donor organizations have taken the initiative in developing guidelines in order to respond to their own changing philosophies. It is also apparent that a divergence took place in the early 1970’s in the approach to rural water supply and sanitation project design, with the larger bilateral donors and others pursuing a national programming approach, whereas the NGOs and some smaller donors opted for developing community based approaches. The move towards involving communities was followed by the larger bilateral donor agencies much later. This evolution in the design of rural water supply and sanitation projects and programs which reflect the changing aid philosophy, may be classified as:

- The Top-Down Approach
- Community-Based Approach
- The Demand-Responsive Approach
- The Integrated-Holistic Systemic Approach

In the early days of development co-operation (1960s) the establishment of drinking water supply and sanitation provisions was approached with an engineering view. The focus used to be mainly on the provision of water supply facilities, with the technologies that were developed in the recipient country or exported from donor countries. A traditional ‘top-down’ approach has often been followed in the past, whereby government and also the donor agencies (under donor assisted projects) decided which communities should receive what water services. Government agencies tended to be paternalistic.

- **Community-Based Approach**

In the early seventies it became clear that the provision of water supply and sanitation facilities alone, without proper hygiene behaviour input, often did not have significant impact on health. At that time water was often provided
free of charge. Policies stipulated that water should be free of charge and it is
the responsibility of the respective government to operate and maintain the
systems. However, because of inadequate resources in terms of fund,
institutional capacity and human resources large numbers of water supply
systems were found to be non-functional at any given point of time and it
became clear that water has an economic value. It also became obvious that
‘grass root’ communities need to be involved in the program implementation
and also take the responsibilities for the management of the water supply and
sanitation facilities. Since then community management and cost recovery have
become very important issues that are being addressed in programs and policies
of many countries.

> The Demand-Responsive Approach (DRA)

A ‘Demand-Responsive Approach’ (DRA) is not only people-oriented and
participatory, but also economically sound. Two essential components of the
demand-responsive approach are design of sustainable financial policies and
institutional mechanisms for service delivery. The Donors are currently
promoting a demand-responsive approach to the provision of rural water
services that focuses on what users want, what they are willing to pay and what
they are able to sustain. Community members are expected to participate in the
design process, in particular, to choose collectively the type and the level of
service they are willing to pay. In addition, communities are required to
contribute cash or labor for construction (linking their contribution to the level
of service demanded) and to take care of system O&M.

Although many Donors’ projects claim that they follow DRA in project
documents, the term is somewhat overused and vague. ‘Demand’ is a relative
term and that while all program or projects are demand-driven the degree to
which they are truly demand-driven depends on who makes the decisions about
the type and level of service and what range of decisions the users makes. The
larger the proportion of capital costs the users pay, the more likely a project is
to be demand-oriented. However there is no magic ratio for cost sharing.
The Integrated-Holistic Systemic Approach

In the early 1990s, the environmental aspects of water and sanitation provisions came in the forefront. The United Nations Conference on Environment and Development, 1992 recognized worldwide that environment is fundamental to sustainability. To safeguard the sustainable supply of safe drinking water, concerted action is needed on all the fronts, including agriculture, urban and spatial planning, population planning, power generation, and industrial development. To prevent further depletion and degradation of freshwater resources, a more holistic approach is being promoted, which is known as Integrated Water Resource Management (IWRM). The objective of Integrated Water Resource Development and Management is to ensure optimal and sustainable use of water resources for economic and social development, while protecting and improving the ecological value of the environment. IWRM is necessary to combat increasing water scarcity and pollution. Methods include water pricing, allocation, conservation and reuse, rainwater harvesting and wastewater management. All water developmental projects need to be integrated at the micro and macro level. An appropriate mix of legislation, pricing policy and enforcement measures is essential to optimize water conservation and protection. Furthermore, it has become clear that the provision of safe and sufficient water supply and sanitation facilities has to be placed within the wider context of ‘Integrated Water Resources Management’.

The water supply and sanitation sector now faces two great challenges in developing countries. The first challenge is the implementation of the old agenda of providing household service. The second challenge is the implementation of the new agenda of environmental sustainable development that includes each of the issues mentioned above, as they are all vitally important and necessary for achieving sustainable development.
2.2.2. Linkages and parallels in Water Supply and Rural Development project design

There are clear linkages between rural development and rural water projects. Water is an essential element for agricultural production, and it is also essential to the well being of the rural population who drive the production. There are also dear parallels in the development of the approaches taken in the design of rural water and rural development or agricultural projects. The Integrated Watershed Management Projects, undertaken in Ralegoan Siddhi in Maharashtra and Alwar district of Rajasthan in India are discussed in detailed in the chapter 4 as case studies amply highlights the success of this approach.

In agriculture the trend has been away from the coordinated national and regional programs of the 1960’s. The present approach provides for simple ‘interventions’ aimed at removing one or two critical development constraints. It is based on local level planning and the involvement of people in a phased process that improves productivity and local administration. Rural development is seen by most as a broad spectrum of activities of which the development of water supplies is but one key element. In parallel to this, some donors like the Development Banks are moving back towards special sector projects which very specifically focus on improving productive capacity.

The approach to water sector project design has also moved away from national master plans and national programs to simpler projects that are designed and implemented at local level with the involvement of the beneficiaries themselves. However, the ‘International Water Decade’ has created an anomaly in this trend. The high degree of interest that has been generated by the Decade has led some donors back to thinking of water sector development in the context of large national programs requiring broad planning exercises and a high degree of technical support. Furthermore, this has led back to vertical sector water projects in which intersectoral linkages are not sought. In this respect water projects differ significantly from the majority of rural development projects.
2.2.3. Project Components in the research trends in Rural Water Supply and Sanitation

A review of contemporary literature reveals that recently the trend in sector research has been directed towards the various individual components of the water and sanitation projects. However, less has been written on how these components are brought together in a holistic program or project model. The range of these popular research fields is summarized below:

♦ Community participation
♦ Social development perspective and mobilization
♦ Appropriate, least cost and sustainable technology
♦ Involvement of women
♦ Social marketing approach to hygiene and sanitation promotion
♦ Human resource development
♦ Institutional development
♦ Operation and Maintenance and community management
♦ Integrated water resource management
♦ Affordability, tariffs, cost recovery
♦ Sustainability, effectiveness, equity, efficiency and replicability
♦ Health impact evaluation
♦ Methodology for participatory assessments
♦ Social surveys and feasibility studies
♦ Monitoring and evaluation methodologies

Of all these, community participation, the involvement of women, sustainability issues, appropriate technology, human resource development, and institutional development have received the most attention and interest. Conversely, the provision of credit and cost recovery has not emerged as a major research topic of interest.
2.2.4. Summary and Model for Rural Water Supply and Sanitation

This section illustrates that historically the approach adopted by both donors and Developing Governments toward the design of rural development and water supply and sanitation projects is a product of the prevailing aid philosophies of the time. Furthermore, the trend in project design is slowly moving away from complex initiatives, which were often centrally (or vertically) designed by the experts of the donor community to simpler projects aimed at the removal of specific development constraints and that involve people in decision making.

It is possible to synthesize a preliminary conceptual systems model for rural water supply and sanitation development within the broader context of a rural development framework. The system model embodies the concepts of simplicity and community involvement, and defines the most effective roles of the three main systems; donors, governments and people. This hybrid model which is drawn from the pragmatic application of the basic needs approach to rural development, and the practical experiences of the rural water and sanitation project design described above is summarized in Table 2. In the context of this study, the three systems that exist are government, donors and the community. This is named as ‘Summary of Conceptual Supra Systems Model for Rural Water Supply and Sanitation Sector Development based on Contemporary Approaches’. However, when applying systems thinking to these contemporary approaches it is clear that not all the elements of the sector system are recognized.

Within projects there should be a partnership between the public and private sector. Furthermore, in reviewing the present research trends and project models, a number of common elements emerge as important project components. These are the use of appropriate technology, the need for monitoring and evaluation, the need for complementary health cum hygiene education and the need of intermediaries. A further omission in these approaches is that the dynamic process of sector development is not given due consideration.
It is asserted that control oriented planning and management is ineffective and inappropriate in coping with the complexity and uncertainty of development projects, as is the case in the rural water and sanitation sector. By planning and implementing projects sequentially through experimental, pilot, demonstration and replication phases, problems can be effectively solved. This model is particularly applicable to the rural water supply and sanitation sector as it takes into account the need for the development of appropriate technology and a community based delivery system. Development stages can be characterized as under:

First, the Experimental Stage, which are small scale projects for finding ways of coping with basic needs, elements of a problem not well defined, courses of action not explored or their impact known. Second, the Pilot Stage, in which the applicability of the innovations produced in the experimental stage, can be tested in more realistic and typical environments as a prototype for large scale activities. Third, the Demonstration Stage, in which the purpose is to show that the new technologies, methods, programs etc., are to be supplemented by the traditional ones because they increase production or deliver social services more efficiently. Fourth, the Replication Stage is where the tested methods and techniques are widely replicated to provide full-scale production or wide distribution of services. From the above, it can be concluded that the sector development process is likely to be dynamic and that the role of the key sub systems will change over time.

India provides a unique case study in which the model can be tested and compared with more traditional forms of aid and technical assistance.
Table 2. Summary of a ‘Conceptual Supra Systems Model for Rural Water Supply and Sanitation Sector Development’ based on Contemporary Approaches.

1. Goal and objective

Improved health, education, economy and social status through the provision of improved water, sanitation and education in an integrated program.

2. Inputs, outputs and transformation process.

Finance (grants and loans etc.) and expertise (consultants and technical assistance etc.), which, is provided by the donor, is transformed into appropriate water and sanitation infrastructure by governments and communities through a process of designing and implementing projects and programs. The dominant government model, capitalist, socialist, democratic, may determine the transformation process.

3. The systems and their functions

a) Donors should provide financial and technical resources to Governments in order that the Government takes up innovative sector development approaches. Also they support the Government in the field of capacity building, communication and social mobilization development plan and communities centered activities. Donors should experiment integrated community oriented sector pilot projects and disseminate the finding to the Government for scaling up. Donor needs to evolve towards a ‘true partnership’.

b) Governments are responsible for establishing policy, create an enabling environment conducive for all sector stakeholders to participate at all levels in sector development besides providing inputs for strengthening local level planning and implementation capacity. This includes imparting training, motivating and mobilizing communities into self-help efforts and providing technical, financial and enforcement support.

c) Communities should participate fully in planning, constructing, managing and maintaining the water supply and sanitation systems. They should be at the centre stage of all decision making in developmental activities.

4. Key concepts for optimum interaction between the systems.

a) Participatory institutional mechanism must be put in place to involve all sections of society in decision making.

b) All section of the community-based groups should have an adequate voice in participatory decision making in implementation and management of the projects.

c) Projects should be simple and address specific issues, but be set in a broad rural development framework or context and be coordinated with activities in other sectors such as health, education, watershed management and agriculture.

Contd......50
d) Furthermore, projects should integrate water, sanitation and hygiene promotion components and be based on the use of appropriate technology in order to ensure sustainability.

e) A holistic approach linking the quality and quantity aspects of water management should be adopted.

f) Part of the capital cost and 100% of the recurring cost should be borne by the community.

g) Programs should evolve adaptively from small projects in which the various components and strategies have been tested.

h) Projects should be systematically monitored and evaluated by the donor and the recipients in order to feed the evolution process.

5. Some key actors and their perceived roles.

a) Donor experts should concentrate on training national and local staff and other institution capacity building activities in order to increase local capacity and provide appropriate technology input.

b) Extension workers should provide the interface between government, local self-government and communities and be involved in empowering the community to participate fully in development projects.

c) Government should use NGOs to supplement extension workers as intermediary in their communications with communities, i.e., as systems boundary spanning mechanisms.

d) Private Sector, which is a largely untapped resource, may well be able to play an increasing role in accelerating the development and operations of water and sanitation systems at local level.

e) Women because of their role as the carriers of water and guardians of family health should be a major focus of mobilization and education campaigns.

6. The Supra Systems Dynamics.

As sector development progresses from small-scale pilot activities to large-scale programs in an adaptive and flexible learning process, the function of the systems and role of the actors will change over time. For example, the donor’s role may change from providing intensive technical assistance in training and institutional building to simple funding. The role of the Government may be confined to creating enabling environment for transferring the program and project implementation completely to the community. Whereas, the community role may change from that being passive recipients of the benefits of the RWSS projects to that of project implementers.
2.3. Rural Development Policy - an evolutionary approach

Since Independence rural development has come to be considered synonymous with poverty alleviation. During the first four years (1947-51) of Independence, there was a large element of trial and error in public policies. The planned development system and the Nehruvian approach in the initial years of India's Independence laid emphasis on science-based capital intensive industries and public sector enterprises, which came to acquire commanding heights. Indications of an effort for long-term tasks of development were available with the establishment of the Planning Commission in March 1950. The Planning Commission, in its document prepared in 1962 on ‘Perspectives of Development 1961-76: Implication for a Minimum Level of Living’32, highlighted that ‘the central concern of our planning has to be the removal of poverty as early as possible’. This paved way for a 'program approach' since the Sixth Five-Year Plan (1980-85). Though rural development and agriculture were State subjects, the Centre had assumed leadership by introducing a large number of centrally sponsored schemes and gradually the Center’s role in these areas increased. While the Centre solely funded some of these schemes others had varying contributions from the States, from 20 to 50 percent. Such an initiative was necessary by the Centre, as the states were hesitant to formulate specific schemes for want of expertise and resources. Political will was also lacking.

The strategies and policies adopted two approaches, one focusing on the overall economic development (through percolation/trickle-down/spread effect) and another poverty alleviation (direct intervention). Though these approaches reinforce each other, there was no effort to integrate them. It was widely believed that public policies that accelerate economic growth would lead to a 'trickle down' and 'spread effect' benefiting the poor. In fact, this prescription remained the dominant ideology of development. By the early 1970s an increasing concern about poverty developed due to the apparent
failure of the trickle down strategy. Despite some impressive achievement in aggregate terms, the process of economic growth appeared to bypass the poor. Two competing approaches for poverty alleviation evolved during this period. First, the Redistribution With Growth Approach (RWG) aimed at increasing the productivity, incomes and output of the low-income groups to improve their welfare. The Second approach, the Basic Human Needs Approach (BHN) involved targeting and addressing the core basic needs of the poor i.e., food, water supply, sanitation, housing and health. Unfortunately the BHN approach gained importance very late.

The experience with Rural Development during the first three decades of the post—Independence period illustrates the evolutionary approach from one stage to the next. The strategies were evolved in phases, beginning with community development and gradually encompassing Panchayati Raj for strengthening the governmental initiative through popular participation. The growing disparities between areas and sections of population necessitated target group and area-oriented special development programs during the 1970s and 80s. This was a major departure from the earlier strategy.

2.3.1. Existing Rural Development programs

The strategy for Rural Development followed during the past two decades and the various programs and schemes, thus evolved impinging on rural poor can be classified as follows:

i) The first dimension of rural development includes basically ‘Household oriented programs of income generation, through assets and self employment’ and comprises programs such as Swamajayanti Gram Swarozgar Yojana in which Integrated Rural Development Program (IRDP) and its components, viz., Training of Rural Youth for Self-Employment (TRYSEM), Development of Women and Child in Rural Areas (DWCRA), Ganga Kalyan Yojana (GICY) and Million Well Scheme (MWS) with effect from April 1, 1999. Land Reforms also form part of this category of programs.
ii) The second dimension of the programs is of income transfer through employment and infrastructure development and comprises primarily Jawahar Gram Samridhi Yojana (JGSY), and Employment Generation Scheme (EGS).

iii) The third dimension of rural development programs are for special areas to counter poverty caused by hostile agro climatic condition and degradation of the eco-system and comprises Drought Prone Areas Program, Desert Development Program, Wastelands Development Program as well as Watershed Development Program.

iv) The fourth dimension includes the Minimum Needs Program (MNP), which is aimed at providing social amenities and services at subsidised costs or even free to the target groups. These include the Rural Housing Scheme i.e., Indira Awas Yojana (IAY), Accelerated Rural Water Supply Program (ARWSP), Central Rural Sanitation Program (CRSP), Primary Education, Health, Family Welfare, Targeted Public Distribution Systems (TPDS) and Prime Minister’s Gramodaya Yojana (PMGY).

v) The fifth dimension of rural development programs are basically social security programs and comprises, National Old Age Pension Scheme (NAPS) National Family Benefit Scheme (NFBS), National Maternity Benefit Scheme (NMBS) and Targeted Public Distribution Systems (TPDS).

2.3.2. Impact of the Rural Development programs

It is not intended to review the impact of the rural development policies and programs in India, as it is not within the scope of this study. However, because of its relevance to the policy environment and implementation strategies of rural water supply and sanitation program, a few selective studies of recent time and comments of Rural Development Experts on the rural development programs, are mentioned below:

i) The population below the poverty-line declined between 1950 and 1991, roughly by 25 per cent over the past 40 years because of direct attack on poverty, though in absolute terms the number of poor has increased to 275
million from 180 million during the same period. The demographic factor has been totally ignored in the poverty alleviation programs.

ii) In spite of a huge investment on wage as well as self-employment, unemployment is mounting day by day.

iii) The slide on the Human Development Index reflects the pathetic condition of social services and basic human needs. According to the Human Development Report, India ranked 138th on the Human Development Index.

iv) The debate on anti-poverty programs seems to have missed the important question of identifying and encouraging appropriate institutions for implementing the same.

v) Despite the 73rd Constitutional Amendment, only a few states have taken it seriously, and even there, the PR institutions have not been provided the required amount of financial resources and the powers as envisaged in the amendment. The major decision-making power continues to be in the hands of bureaucrats and state-level political leaders. Even after more than a decade of the amendment, the central and state leaderships could not muster courage to implement the amended PR Act in letter and spirit. There is an urgent need to define the role of the District Collector vis-a-vis PRIs.

vi) IRDP, which is considered a focal instrument of change in rural areas, has produced positive but small results. Though IRDP has created employment outside agriculture, it has not been able to diversify the rural economy to any significant extent, as the activities selected by the IRDP beneficiaries are not productive ones.

vii) So far none of the areas covered under DPAP for more than 20 years could make any ecological and economic change, rather there is growing demand to bring more and more areas under DPAP.

viii) Increased investment on free doles and subsidies in various forms has made people more dependent on the government. It adversely affected their initiative for self-help in the development process.

ix) Complete lack of integrated approach. In fact due to a pragmatic approach, the whole process of rural development has been fragmented. There
is no planning and no long-term perspective for development. All the programs are implemented in a piece-meal manner and focused on chasing physical and financial targets. Poor delivery mechanism and lack of transparency and accountability in the implementation of the programs and ad-hoc solutions approach have also contributed to the fragmented approach of rural development programs in India. As a result the present approach of too many programs for poverty eradication did not yield the desired result.

x) Even where Panchayat Raj was implemented, involvement of communities was only marginal. In this aspect there has been more of a bureaucratization of the Panchayats than democratization of the program. The totally government provided water supply systems have only helped to create a culture of dependence in the communities. The water supply system is not perceived as common property. Adequate structural arrangements and procedures for community participation have not been made anywhere. Only isolated successes were found where voluntary agencies were involved and where participation was carefully built into the programs.

2.3.3. Summary

The post independence rural development environment in India can be characterized by the Governments systems structure and stated policy, and the translation of this policy into socio-political and administrative reforms and development interventions. The central concern of the planning of Government’s rural development has been the removal of poverty as early as possible. This policy is translated into reality using broadly five main strategies under the Poverty Alleviation Programs (PAPs) and addressing the Basic Human Needs (BHN) of the poor i.e., food, water supply, sanitation, housing and health. Firstly, through individual household and poverty group-oriented programs for income generation through creation / transfer of assets and skill endowment. Secondly, through the second dimension of the programs of income transfer through employment and infrastructure development. Thirdly through programs for special areas to counter endemic poverty caused by
hostile agro-climatic condition and degradation of the eco system. Fourthly, provision of basic minimum services through utility services which is aimed at providing social amenities and services at subsidized costs or even free to the target groups. And the fifth dimension of rural development programs is basically social security assistance to the poor families and the destitute and families below the poverty line. Provision of drinking water supply, sanitation and health education is also very much a part of the broad primary health care strategy. Government also sees women’s development as an essential component of a broader rural development strategy. India is developing slowly and steadily the capacity for decentralized planning and the involvement of people in the planning process.

However, there are a number of constraints to the development process that can be seen. Rural population growth is alarmingly high. During the period 1951 to 2001 the population has increased nearly two and a half times, from 299 million to 741 million in India, and last decade from 1991 to 2001, the growth of rural population in absolute term is about 112 million, 17.8 % increased over the decade. The population explosion in the longer term threatens to overwhelm the limited resources available. The rural development programs and schemes, and primary health care program including water supply and sanitation program are large, complex and centrally designed programs that are proceeding much more slowly than expected. One of the major reasons for this is due to overlapping responsibilities of the policy making institutions at the national and state level and complex and inadequate infrastructure of the executing agencies involved and contradicting policies. Governments decentralized process is also proceeding much more slowly than expected, and the administrative and planning capacity at the Gram Panchayat level is inadequate and not fully able to provide the perceived interface between the government and the community system. The extension services are also not effective and are inconsistent due to overlapping functions, lack of motivation and inadequate coordination at the community level.
2.4. National Rural Water Supply and Sanitation - policies and programs

Historically, most rural drinking water in India has been supplied outside the government’s sphere of influence or responsibility. Community-managed open wells and private wells, tanks, ponds and small-scale irrigation reservoirs have been and continue to some extent to be the main source of rural drinking water supply. The first government-installed wells appeared in the 1950s as part of a policy to meet basic needs for drinking water. Since then, public service has increased and the involvement of users and communities in rural water supply has decreased. Rural drinking water supply is a State subject and the responsibility of providing safe drinking water is undertaken by the State Governments through their line department i.e. Public Health Engineering Department or Water Supply and Sewerage Board/Authority. The efforts of the States are supplemented by the Central Government under the Centrally Sponsored Scheme Primarily through ‘Accelerated Rural Water Supply Program (ARWSP)’ and other related programs.

In India water supply and sanitation were added to the national agenda during the First Five-Year Plan (FYP) period (1951-56). In 1954, the first national water supply and sanitation program was launched as part of the government’s health plan. Central and state administrations provided equal funding mainly for rural piped water supply schemes, with limited provision for point sources such as dug wells and handpumps. During the initial years, the program realized only limited achievements, mainly because states lacked qualified staff to plan and execute projects, and materials were in short supply. During each of the two subsequent Five-Year Plans and Three Annual Plans (1954-1969), funding was allocated for the development and strengthening of ‘State Public Health Engineering Departments’. As a result of the Mid-term Appraisal of the Fourth FYP (1969-74), a Central Scheme named ‘Accelerated Rural Water Supply Program (ARWSP)’ was introduced in 1972-73. This was introduced as a part of the overall program of special social
welfare schemes to accelerate the pace of implementation of the rural water supply coverage. Under this Program, the states were provided with hundred percent grants for extending water supply to problem villages, preference being given to backward areas. During the Fifth FYP (1974-79)41 ‘The Minimum Needs Program (MNP) - 20 point program’ was introduced in 1975, under the State Sector. Point number 8 of the 2.0 Point Program was regarding the water supply and sanitation sector development and this particular point has been given the highest priority in the State sector development program. With the introduction of MNP during this plan, ARWSP was withdrawn from 1974-75. However, ARWSP was reintroduced in 1977-78 when the progress of supply of safe water in the identified problem villages was not found to the expectations.

The Sixth FYP (1980-85)41 was launched at the time of increasing Global awareness of the need to give more emphasis on provision of basic drinking water supply and sanitation facilities to all. India as a signatory to the UN Resolution had pledged its full support to the International Decade Program. A National Master Plan of India for the decade 1981-90 was brought out by the Ministry of Works and Housing in July 1983. This is the beginning of the era of target-driven, norms-driven, highly centralized planning and implementation of the water and sanitation projects with an objective of accelerating the coverage. Although traditionally the total sector project implementation was based on ‘Top-Down Approach’ but with the increased allocation in the sector from42 1.46% in the First Five-Year Plan (in absolute term Rs 490 million) of the government’s total budget to 4.60 % in the Ninth Five-Year Plan (in absolute term Rs 395.38 billion) the pace of centrally driven project implementation drastically increased. The increasing plan investments in water supply and sanitation and the increasing sector investments as percentage of total plan outlay is shown in figure 4 and figure 5 respectively. The present national policy guiding the rural water supply (RWS) sector today is contained in the Eighth FYP (1992-97)41. The Eighth Plan identified several points of emphasis, these being that: ♦ water should be managed as a commodity in the same manner as any other resource; ♦ the delivery of water
services should be based on the principle of effective demand and should correspond to the standard of service that users are willing to maintain, operate and finance; ✦ community is to bear part of the capital cost of the scheme and 100 percent recurring cost; ✦ local bodies should be responsible for operating and maintaining the system installed; ✦ local bodies should be free to levy and raise appropriate user charges for drinking water and sanitation services, undertaking operations and maintenance if not further investment, and be self-sustaining; ✦ the private sector should be encouraged to construct and maintain schemes to the maximum extent feasible; and ✦ appropriate links should be forged between water supply and environmental sanitation. These points address the challenges that have emerged in the sector. Moreover, the Eighth Five-Year Plan specifically emphasized the desirability of adopting an integrated approach to planning and implementation, which entailed the provision of primary health care, potable water, women’s welfare, immunization and sanitation facilities, all in collaboration with local administrations and user communities.

The Ninth Five-Year Plan (1997-2002)\(^4\) continued to implement the objectives and program envisaged and implemented during the 8\(^{th}\) F.Y.P. Launching of the Sector Reform Pilot Projects\(^4\) in 67 selected districts in 1999 is a milestone under RWS reform initiatives in India. The Tenth FYP (2003-07) strategies are meant to further strengthen the policy framework and have advocated further decentralization of the Sector Program.
Fig 4: Increasing plan investments in Water Supply and Sanitation

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<td>65224</td>
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Source: Planning Commission
Note: Outlays shown are Central plus State investments at current prices.

Fig 5: Increasing Sector investments (as percentages of total plan outlay)

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<td>2.62</td>
<td>3.43</td>
<td>4.15</td>
<td>3.62</td>
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Sources: Planning Commission
All figures in the graph are in percentage
Note: Outlays shown are Central plus State investments at current prices

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2.4.1. Rural Water Supply Sector-issues and assessment

At this stage it would be pertinent to critically review some of the issues of the present rural water supply and sanitation policy framework, institutional, coverage and finance related issues etc.

i) Coverage

Despite cumulative investment of Rupees 400 billion (about US$ 8 billion)\(^4\) since the First Five Year-Plan (1951-56) analysis of data from several sources shows that between 69 to 74 percent of India’s rural population take their drinking water from protected sources, leaving an unserved population of 26 to 31 percent. Study carried out by the Program Evaluation Organization\(^5\) (PEO), an independent organization under the Planning Commission, GOI in 1996-97 revealed that at any point of time about 20 per cent of the rural water supply schemes remains non-functional due to lack of operation and maintenance by the related government department. In addition to this as per the GOI report\(^6\) based on one per cent stratified random sample survey carried out by the State Governments 217,211 habitations (more than 15% of total habitations) are affected with water quality problems. Thus at present the status of coverage of rural population with safe drinking water in India is not so encouraging. With ‘water quality’ and ‘sustainability of sources and system’ issues getting more extensive the ever-target of achieving total national coverage in near future could be in serious trouble. Inspite of many difficulties faced by India, the efforts towards fulfilling the objective of drinking water to all is appreciable taking into consideration the diversified hydrological environment, difficult terrain, remote and scattered pattern of habitations in rural India,

ii) Technology options

An impressive number of installations i.e., more than 3.7 million handpumps and over 145 thousand piped water supply schemes have been constructed so far\(^2\). In 1998, the World Bank\(^3\) estimates, that approximately 75% of the total population served by public water supply system is served by handpump technology, while 25% are served by piped water supply systems.

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During the 1980s more than 90% of the covered population were based on handpumps and dug wells. At present there is a trend to construct more number of piped water supply schemes, which are capital, and recurring cost intensive. As a result per capita cost of the schemes is increasing every year. Technologies developed and field-tested to remove fluoride, arsenic, iron etc., have shown satisfactory results in a laboratory environment. The complexity, high cost and inconvenience of these technologies, however, have constrained their implementation and sustainability.

iii) Drinking water sources and related issues

Drinking water for rural households is facing increasing competition from irrigation. Approximately 90% of India’s population relies on shallow or deep groundwater aquifers for drinking water. However, domestic water needs account for only 5% of total groundwater abstraction. The rapid development in groundwater-based irrigation causing groundwater depletion resulted in installation of new capital cost intensive installation replacing the existing system. Government subsidies, which are provided to the agriculture sector only serves to exacerbate the situation. Highly subsidized irrigation electricity tariffs, and favorable investment terms offered for irrigation well construction, have led to an indiscriminate and disproportionate level of irrigation groundwater abstraction. Without a change in the government policy and/or intervention the situation is likely to continue to deteriorate.

Presently in India only 30-35% of the total estimated groundwater resources are being exploited. The survey found that in one-third of the sample habitations, a seasonal or permanent fall in the water table had been observed. While the findings are not conclusive they may be indicative of a trend.

iv) Water quality

Water quality issues are becoming critical as ground water depletion worsens. The fluoride contamination affects more than 160 districts in 17 states and excess arsenic are extensive in 8 districts of West Bengal. The indiscriminate use of fertilizers and insecticides along with unscientific usage of single pit latrine and disposal of domestic waste water, have further
contributed to the deterioration of quality of groundwater. The whole of the coastal area of the country face the problem of salinity in drinking water. The lack of reliable data, however, makes it difficult to appreciate the magnitude and impact of the problem.

v) Sector financing

Under the First, Second and Third Five Year Plan, the state government were exclusively responsible for all the investment in the sector. In the Fourth Five Year Plan this situation changed and almost 15% of the investment for the sector was centrally funded under Accelerated Rural Water Supply Program (ARWSP). This proportion was increased to over 30% in the Fifth FYP and has been increasing progressively and during the financial year 1999-2000 it is 42% in terms of total expenditure made in RWS sector. This trend is somewhat surprising given that the rural water supply is a state subject and therefore the responsibility of the state governments. Centralized ‘National Guidelines’ and an increasing proportion of central funding obviously present a formidable hurdle to decentralized planning at the state and the local level.

Comprehensive Action Plan prepared by the states in 1999 indicated that the total requirement of funds for providing safe water to all by 2004 would be around Rs 440 billion, inclusive of both central and state shares. Based on the present trend of sector funding, at best the fund that would be available for achieving the same is about Rs. 265 billion leaving a deficit of about Rs. 175 billion. The fiscal deficit of the states has deteriorated steadily.

vi) Institutional issues

In many states, the RWSS project is being implemented by the PHED and the completed schemes are handed over to Panchayat for operation and maintenance. It is not surprising that the Gram Panchayats (GPs) are often reluctant to take over O&M of the schemes, many of which are poorly designed and constructed and in relation to which they have had no input. Though in principle, community participation would be ensured by democratic representation through the Local Self Governments but in reality there are a number of problems to address. Firstly the pace of implementation of
Panchayat Raj is rather slow. Secondly, it can be argued that Panchayat Raj brings party politics down to community level. The polarization and factionalism that often result at the local government level make broader community participation in decision making regarding RWSS projects difficult to attain. Thirdly, the rules and regulations of Panchayat Raj do not automatically ensure an appropriate organisational set up for management of RWSS projects. This requires involvement of all stakeholders, of which the most important are the rural women,

vii) Operation and maintenance

Management and financial responsibility for RWS operations and maintenance has been divided among various institutions at different administrative levels. In each case, the specific responsibilities are poorly defined, and despite absence of cost-reflective prices the requisite funding has not been made available by government for O&M activities. A maximum of 15% of the planned capital investment budget provided by each state under MNP is earmarked for O&M and the same percentage is provided under central program of ARWSP.

Panchayats are now responsible for O&M of commissioned schemes and they are reluctant to assume this role. Reasons for this vary but include lack of managerial autonomy, inadequate trained staff and financial support and typically complicated schemes constructed without taking into consideration people’s preference, and lack of ownership of the assets. Government of India has estimated that Rs 20 billion per year would be required to maintain all public water supply schemes for O&M of the systems created. This is almost 4 times the current allocation of about Rs 5 billion per year.

viii) Inter-sector coordination

One of the critical issues is that the RWSS programs operate in isolation from programs in health, education and water resource management. This is a reflection of the fact that water and sanitation is not pursued with the aim of reducing diseases, improving hygiene, improving educational levels or
reducing poverty. Morbidity and mortality due to water-borne diseases have not declined commensurate with the increase in availability of potable water supply. India still loses about 0.4 to 0.5 million children under five years due to diarrhoea alone. One of the reasons is the failure to make significant headway in improving personal and home hygiene, especially in the care of the young children and the condition surrounding birth. Moreover, low levels of literacy and awareness of the health benefits of improved hygiene behaviour is potential hindrance to the success of the sector program.

The deteriorating groundwater situation is of critical importance to the RWS sector as it is largely groundwater dependent (more than 85%). Management of water has been through a top-down approach by multiple central and state institutions and has become virtually a government monopoly. A ‘supply-side approach’ exploiting additional water resources have been predominantly adopted. This approach has resulted in major economic, social and environmental costs.

2.4.2. New Policy initiatives

The sector reform projects introduced in 1999, envisaged total community participation in project formulation, implementation and maintenance. In practice, however, these principles have seldom been reflected in sector operations for lack of effective mechanisms to translate the policy statements into action. Reform initiatives in RWS sector after 3 years of project implementation can be concluded as ‘community demand responsive program’ of the Government with some people’s participation. The target-oriented approach continues to guide activities and investments in the sector. While the current approaches of Sector Reform draw on the inherent strength of the community management but barring few pilot projects districts it is the State Water Supply Agency (Line Department) that is planning and implementing water supply schemes on behalf of the community. While the ongoing Sector Reform program place responsibility of operation and maintenance on local institutions and communities, the pace of change has
been slow in state government agencies. This is reflected in the relatively low level of participation of the community in decision and making and also low level of expenditure incurred so far. Under AR’WSP the sector funding to the state is 80 per cent of the sector allocation, which is basically a target driven approach. This is also a hindrance to implementation of the reform initiatives.

It was also found that the communities largely do not have the capacity to manage an increased amount of capital for major repairs. They need capacity building and support on managing of financial resources. In the given scenario a number of ‘internal community dynamics’ can threaten community management; e.g. local politics, conflict among different groups, poor leadership, lack of transparency, legal and equity issues, corruption etc. More importantly, the reform initiatives need to be seen as a means of encouraging state governments to move ahead with decentralization to PRIs in line with the 73rd Constitutional amendment. Until major decentralized policy decisions regarding effective community oriented delivery mechanisms are established to guide sectoral operations, the sector viability, both institutionally and financially, will continue to deteriorate.

However, launching of Swajaldhara Program in December 2002 in India to scale up the community driven model in the entire country is a further step to self-reliance in the RWS Sector. The Governments, NGOs, Private Sector and Panchayati Raj Institutions will join hands to inculcate a sense of ownership amongst the community towards long term sustainability of their drinking water assets. It is envisaged that within a timeframe of 2-3 years it will enter the second phase of reforms of ‘total decentralization of the RWSS sector’ and gross reduction of the ‘Large Untied Central Fund’.

2.4.3. Evolution of Rural Sanitation program

Although the Government of India launched the Centrally Sponsored Rural Sanitation Program (CRSP) in 1986, real work in the sector began in 1993. The progress of sanitation coverage, which is measured by the number of latrines constructed, is not encouraging. At the beginning of the IDWSSD
(1981) the rural coverage was only 0.5% and at the end of the Decade (1991) it was about 9.5%, through government initiative it was hardly 2.5%\(^59\). At present (2001), the extent of coverage in India is around 22%\(^60\). A number of field studies, village-level studies, evaluation reports, donor agency status papers and inspection notes have drawn attention to the fact that there are serious problems in program design and implementation. Some of the major constraints are mentioned below:

© Over-reliance of the traditional, supply-driven, subsidy-oriented, government program is hampering private initiative in rural sanitation. High subsidy appeared to promote high cost options.

© There has been a bias, in promoting single model-twin-pit pour flash latrine, as such, does not allow flexibilities in the choice of options by the beneficiaries for different socio-economic groups. Studies revealed that space considerations and affordability are important elements in deciding the type of latrines people adopt.

© Lack of awareness and people’s participation in the program resulted in non-utilization of large numbers of government-constructed latrines and the beneficiaries tend to use the latrine space for storage.

© Most states, being assured of poverty-based allocations, have relegated CRSP to the background and treated it as an adjunct of other rural development program, instead of according it the importance it deserves.

The Central Rural Sanitation Program moves towards a ‘demand driven’ approach. The allocation based approach has been phased out in the 9\(^{th}\) FYP period. The revised program named ‘Total Sanitation Campaign’ (TSC) is being implemented as ‘community led’ and ‘people centered’ with increased stress on awareness building and meeting the demand with alternate delivery mechanism. Rural School Sanitation is a major component and entry point for wider acceptance of sanitation by the rural masses. Technology improvisations according to customer’s preference and location specific, intensive social mobilization and involving co-operatives, women groups, self-help groups, NGOs etc., are important components of the new initiatives. Campaign
launched in 1999 is now taking its momentum and the field performance report are quite encouraging although much needs to be done in the area of hygiene education.

2.4.4. Donor support to the sector

There are several external multi and bi-lateral agencies providing assistance to the rural water supply and sanitation sector in India. The principal External Support Agencies (ESA) in the sector include the bi-lateral agencies of The Netherlands (Dutch), Denmark (DANIDA), Germany (KfW), Sweden (SIDA) and U.K. (ODA), and multilateral such as UNICEF, UNDP and The World Bank. The external agency assistance took its real outset at the beginning of the International Drinking Water & Sanitation Decade and it is estimated that approximately 6% of the sector investments was provided by foreign donors during the period 1980-91. Today, the foreign assistance constitutes about half of that level. According to information from Department of Drinking Water Supply, GOI, Report 2003, a total of 12 states have received support from ESAs with loans from The World Bank and KfW constituting more than 50% of all the financial assistance to the sector61.

UNICEF has been and is the largest multilateral agency involved in the rural water supply and sanitation sector with field-office representation in 10 States. UNICEF has been active in India since the later 1950s and the role of UNICEF has been to assist GOI at the policy level, as well as supporting actual demonstrating type projects. In the past, UNICEF was involved in providing drilling rigs and hardware for hand pump programs. The comparative advantages of UNICEF have been its continuity and long presence in India. Furthermore, it has functioned as an intermediate between central, state governments and non-government organizations.

The World Bank has financed 3 rural water supply and sanitation sector projects in India, and presently The World Bank funding RWSS projects in 4 states namely Uttar Pradesh, Karnataka, Tamil Nadu and Maharashtra are under process. The basic objective for the Bank assisted projects has, by and
large, been to make the local institutions and communities responsible for water supply and environmental sanitation in every respect by adopting an integrated approach with community participation and cost recovery as fundamental components. These projects have been planned and implemented by separate established project organizations and extensive delays have been faced due to too optimistic time scheduling at the time of project planning, and unnecessary complications experienced due to bureaucratic procedures of design, sanctioning, procurement and release of funds for the projects.

The Netherlands’ support for rural water supply and sanitation dates back to the late seventies and support has until now been provided to projects in 6 states. Initially, the projects assisted by Dutch financing were predominantly technically oriented, and not until the mid-1980s were the project objectives changed towards more sustainable development and interventions, with emphasis also on non-technical aspects such as community involvement, O&M including cost recovery issues, health education and institutional building.

Denmark’s assistance to the rural water supply and sanitation sector in India commenced in the early seventies and Danida has until now provided support to projects and programs in 5 States. The main features of the Danish assistance to the sector have been to assist in problem identification and the development of solutions on a pilot-basis. Furthermore, the approach has been to relate directly to national sector policies with focus on broader scale and long-term institutional capacity development.

The British Funding Agency DFID’s through implementation of International Training Network (ITN) program under RWSS sector during 1990-1994 had a major impact in development of the National Sector Human Resource Development program launched by Department of Drinking Water Supply, GOI in 1994-95. The details regarding specific RWSS projects funded by SID A (Sweden) and KfW (Germany) in India are given in chapter 4.
Section S. National Master Decade Plan for Rural Water Supply and Sanitation Program of India

2.5. National Master Plan for Rural Water Supply and Sanitation

The Government of India on 16th October 1980 constituted an Apex Committee under the direction of the Secretary, Ministry of Works and Housing and this committee was responsible for national policy formulation and guidance, and overview of the programs to be undertaken during the Decade, 1981-1991. The Apex committee established three Working Groups, (1) Programs and Manpower, (2) Financial Resources and (3) Material and Equipment, to develop specific and comprehensive recommendations on these activities. The Apex Committee agreed that targets established for the Sixth Five-Year Plan (1980-85) as well as those for the remaining years of the Decade could be adopted in preparing the National Master Plan Document. The voluminous work of preparing the Master Plan document was earned out by the State Governments and the Union Government of India (The Central Public Health and Environmental Engineering Organization under the Ministry of Works and Housing) with the collaboration of the World Health Organization and the United Nations Development Program — India Offices.

The International Drinking Water Supply and Sanitation Decade for India were from 1st April 1981 to 31st March 1991. This Decade period was coordinated with three FY Development Plans, embracing the last four years (April 1981 to March 1985) of the Sixth Five Year Plan, the complete Seventh Five Year Plan (April 1985 - March 1990) and the first year (April 1990 to March 1991) of the Eighth Five Year Plan (April 1990 - March 1995).

2.5.1. Sector coverage

In this chapter only the rural water supply and sanitation component of the Master Plan has been dealt with, as urban areas are not within the purview of this study. The status of the coverage of the rural population served with water supplies and sanitation facilities as on 1st April 1981 (beginning of the Decade) and the projected population of the same in the year 1985 (mid-
Decade) and 1991 (end of the Decade) and the targeted rural population to be covered is shown in Table 3.

Table 3. Rural population coverage with water supply and sanitation

<table>
<thead>
<tr>
<th>Year</th>
<th>Population in million</th>
<th>Water supply coverage targeted</th>
<th>Sanitation coverage targeted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981</td>
<td>525 million (actual)</td>
<td>162 million (actual)-31%</td>
<td>3 million (actual)-0.5%</td>
</tr>
<tr>
<td>1985</td>
<td>556 million (projected)</td>
<td>296 million (projected)-53%</td>
<td>5 million (projected)-0.9%</td>
</tr>
<tr>
<td>1991</td>
<td>609 million (projected)</td>
<td>609 million (projected)-100%</td>
<td>152 million (projected)-25%</td>
</tr>
</tbody>
</table>


As at the beginning of the first year of the International Decade i.e., 31st March, 1981, an estimated 363 million rural population i.e. about 69 percent of the total population was without safe water supplies. The sanitation problem was even more acute as there were some 522 million or practically the entire rural area without adequate basic sanitary facilities. In view of this low levels of coverage, particularly in the area of sanitation, and to bridge the existing wide gap in water and sanitation services, the following ‘Decade Targets’ based on ‘Specific Norms’ was proposed to be attained by March 1991 as shown in Table 4 below:

Table 4: Decade targets

<table>
<thead>
<tr>
<th>Sector Category</th>
<th>Coverage</th>
<th>Level of Service 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural Water Supply</td>
<td>100%</td>
<td>Piped water supplies for 30% of the population; demand range 25-70 lpcd, average 40 lpcd. Spot source water supplies for 70% of the population (dug or hand pumps) average demands 40 lpcd.</td>
</tr>
<tr>
<td>Rural Sanitation</td>
<td>25%</td>
<td>Low cost sanitary methods of disposal.</td>
</tr>
</tbody>
</table>

2.5.2. Decade program funding

The total requirement of funds projected by the states for the implementation of the Decade Program in rural areas was estimated at Rs.76.31 billion based on 1980 price level. Sector wise, the figures are shown in Table 5 below:

Table 5. Decade Program (1981 to 1991) Fund Requirements

<table>
<thead>
<tr>
<th>Sector Category</th>
<th>Rs.</th>
<th>US$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural Water Supply</td>
<td>6525</td>
<td>8365</td>
</tr>
<tr>
<td>Rural Sanitation</td>
<td>747</td>
<td>958</td>
</tr>
<tr>
<td>Operation &amp; Maintenance</td>
<td>359</td>
<td>460</td>
</tr>
<tr>
<td><strong>Total Estimated Cost</strong></td>
<td>7631</td>
<td>9783</td>
</tr>
</tbody>
</table>


Note: Rupees in crore (100 crore=1 billion); US $ in millions,
Exchange Rate/1980Prices adopted : 1US$ = 7.8 Rupees

2.5.3. External and internal assistance

It was envisaged that extensive assistance, both external and within country, would be required in the financing of the Decade Programs. The continuation of financing by National and State Governments and increased amounts of financing from the ESAs during the coming years were anticipated. A listing of financial assistance on specific projects by multilateral agencies and bi-lateral donor countries is given in Table 6. Direct project assistance is being received from The World Bank/IDA and the Government of The Netherlands, Denmark, The Federal Republic of Germany and The European Economic Community. The total estimated costs of these externally assisted projects were Rs. 9.63 billion, of which Rs. 5.54 billion is foreign assistance.
Table 6. RWS project with external assistance (1981)

<table>
<thead>
<tr>
<th>Agency</th>
<th>Number of Projects</th>
<th>Project Cost in Rupees</th>
<th>External Assistance in Rupees</th>
</tr>
</thead>
<tbody>
<tr>
<td>World Bank/ IDA</td>
<td>6</td>
<td>841.00</td>
<td>460.73</td>
</tr>
<tr>
<td>Netherlands</td>
<td>6</td>
<td>55.95</td>
<td>53.53</td>
</tr>
<tr>
<td>Fed. Republic of Germany</td>
<td>1</td>
<td>19.47</td>
<td>9.51</td>
</tr>
<tr>
<td>European Economic Community</td>
<td>1</td>
<td>15.50</td>
<td>18.00*</td>
</tr>
<tr>
<td><strong>Total (Rs. in crore)</strong></td>
<td><strong>14</strong></td>
<td><strong>931.92</strong></td>
<td><strong>541.77</strong></td>
</tr>
</tbody>
</table>

* Counterpart, funding in Rupees

The UNICEF provided assistance in the areas of training, drilling, hand pump rejuvenation and installation, health education and environmental sanitation. The Plan of Operations signed between the Government of India and UNICEF governs the assistance from UNICEF. The input from the regular programs of UNICEF for the period 1981-83 was projected to be of the order of US $ 21 million and US $ 20.6 million in noted or supplementary assistance. US $ 5.6 million from Denmark (DANIDA) and US $ 15.6 million from Sweden (SIDA) was also envisaged. The UNDP, WHO and ODA supported the Decade efforts in India in the area of support services. The assistance from these agencies was in the form of experts, consultants, grants, training facilities, fellowships, equipment and conduct of feasibility studies.

2.5.4. Overview of the Decade Master Plan

The Master Plan for Water Supply and Sanitation envisaged coverage of 100% rural population with drinking water facilities and 25% with sanitation facilities by 1991. The total sector allocation during the period from 1981 to 1991 under rural water supply and sanitation program was Rs. 69.10 billion against the projected amount of Rs 76.31 billion which is short of more than Rs 7.21 billion.
In terms of rural population coverage, while in 1981 (beginning of the decade program) the coverage was 31%, by 1985 (Mid-Decade) the coverage advanced to 56% (3% more than projected coverage) and in March 1991 (End of the Decade Program) the coverage was 72% which fall short by 28% against the projected coverage of 100%. In the rural sanitation sector the coverage increased from 0.5% in 1981 to 9.5% by 1991, which clearly reflects the unrealistic target set and less priority given by the government on sanitation coverage program. Overall it implies that there is a gross mismatch between the financial projection and the target to be achieved at the end of the decade i.e., 1991.

After more than two decades from the beginning of the IDWSSD India now aims to reach 100 per cent coverage in terms of rural water supply by 2004, consolidation by 2007, and augmentation by 2015. If it is assumed that India will maintain 100 per cent coverage from 2004 onwards, projections based on current level of coverage and estimated population growth trends, this will mean that: by 2004, India will need to reach an additional (from the current level) 232 million people, a further 19 million people by 2004 (from the 2004 level) to maintain 100 per cent coverage, another 33 million (from the 2007 level) people by 2015. If the Millennium and Johannesburg summit goals of halving uncovered populations by 2015 have to be met, the figure will be approximately 142 million additional people (from the current level). The Department of Drinking Water Supply, GOI data reveals that at present more than 92% of the rural habitations are fully covered (provided with 40 lpcd), 7% are partially covered (provided with less than 40 lpcd) and only less than 1% of the habitations are yet to be covered. Thus at present the status of coverage of rural population with safe drinking water in India is not so encouraging as explained in section 2.4.1 of this chapter. Based on the present trend of RWS Sector funding at best the fund that would be available for achieving universal coverage is about Rupees 265 billion (about US$ 5.4 billion) against the required amount of Rs. 440 billion (about US$ 8.8 billion), leaving a deficit of about Rupees 175 billion (about US$ 3.5 billion).
Thus, the National Master Plan for Rural Water Supply and Sanitation Program prepared by the Union Government with the collaboration of the World Health Organization and the United Nations Development Program had a number of deficiencies in its concepts and recommendations. This reflects some of the concerns regarding the global interpretation of the IDWSSD by the government and donor agencies as stated in chapter 1. The plan adopted absolute top Down Approach in achieving its target to be implemented by the respective Centralized Engineering Department without giving due consideration to the critical factors. Some of the critical issues are ♦ ‘Resource Availability’ not only in term of fund, but also in term of trained man power and material availability etc, ♦ ‘Sustainability of the System’, ♦ ‘Capacity of the Institution’ to meet the target and ♦ ‘Involvement of the Beneficiaries’ in the sector development. This resulted in the Development of a ‘Master Plan’ recommending a top down planning structure and process for a single sector program which conflicts with Government’s approach towards decentralization and integrated rural development. Moreover, the funds earmarked under the ‘Donor Funded Projects’ shown as a supplement to the fund required to achieve the decade goal were incorrect. The ‘Donor Funded Projects’ were basically tied up for implementation of pilot projects which had other major components like human resource development, institutional development, procurement of equipment, conduct feasibility studies, consultancy support and other software activities viz., social mobilization and development of communication modules etc., and were not meant exclusively for coverage of rural population with water supply and sanitation facilities. In short, the Master Plan prepared to achieve the ‘Decade Goals’ was unrealistic. As Browne64 stated that ‘most master plans would make a good Annexure to a master plan!’

The India plan is no exception to this. It provided a vast amount of data; an inventory of the sector, together with 10 years forward projections of population and service needs, and a proposed development budget. However, the development strategy, process, and policy recommendations are hard to find, other than those, which have recommended radical financial allocations.
and new financing institutional for sector development and thereby caused controversy and confrontation. Water and sanitation master plans for developing countries should provide as background, a brief and concise sector situation and needs analysis. However, its core should be a sound yet simply stated strategy and policy for improving the sector based on a developmental process. Annexure may include a list of priority projects or needs but, this should be flexible and the list should be updated and revised periodically in a dynamic process. The master plan should be prepared in-house by government through an iterative process with local level planners (from district level) assisted by external technical support if needed. It is time to abandon the ‘classical target oriented’ master plan without giving due consideration to institutional capacity, financial viability and sustainability issues.