

India's Sector Reform Projects and Swajaldhara Programme

A Case of Scaling up Community Managed Water Supply

Submitted to the IRC International Water and Sanitation Centre

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November 2004

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Abstract

The Government of India (GOI) started its sector reform pilot projects (SRPP) in 1999, as a distinct departure from the supply-driven target-oriented approach that characterised its earlier efforts to provide safe drinking water to all its citizens. The SRPP were implemented in 67 districts in 26 (out of 29) states in the country, and was intended to be a demand-driven programme, with the community contributing 10% to installation costs and looking after all subsequent operation and maintenance costs. Significant investments were also to be made in building community capacity to manage their new water supply schemes, and also in providing information, education and communication (IEC) about the SRPP. Despite the detailed guidelines, reporting & monitoring formats, and the institutional structure at district, state and national levels, there were problems implementing the SRP on the ground. Even as these were being identified and addressed, the government scaled up the SRPP in December 2002 into a countrywide programme called the *Swajaldhara*, based closely on the SRP.

The *Swajaldhara* programme is a bold break from the past, and deserves commendation for the stupendous effort it made to scale up to national level, a community-based, demand responsive and participatory drinking water supply programme in a vast and diverse country like India. It is therefore unfortunate that the unresolved shortcomings of the SRP have hampered its effectiveness and sustainability.

This case study of how the SRP was implemented in two districts in Andhra Pradesh, Khammam and Chittoor, documents the situation on the ground, and identifies issues that need to be considered while scaling up. In particular, it notes the chasm between programmes, strategies and guidelines framed by Central Government Ministries in New Delhi, and the problems and pressures faced by the district administration in implementing these programmes. It also highlights the problems faced by villagers, who are informed about a new community scheme and asked to dismantle existing institutional structures to 'fit into' the scheme requirements, provided little or no training in running the new scheme, and asked to pay for the service. Disgruntled district line department staff, who are supposed to help those implementing the new schemes, and NGOs whose politics reduce their efficiency as facilitating agencies, do little to help these communities overcome implementing problems. The only silver lining seems to be the serious attempt made by the Chittoor Water and Sanitation Society to implement the pilot projects according to the spirit of the sector reforms. But since results took a painfully long time to emerge reduced the usefulness of the effort in the eyes of even the government, and this approach was abandoned in favour of the fast-track Khammam model of physical implementation.

The rich history of community management of rural water supply in the country, pre- and post-SRPP highlight the need to re-think the strategy of scaling up community management in water supplies. While arranging finances and facilitating government orders, guidelines and formats are necessary components to any scaling up effort, these are by no means sufficient. There is, in addition, a pressing need to (1) define operating rules at the local level through multi-stakeholder meetings with major stakeholders at district and sub-district levels (e.g., village communities, NGOs, local line department staff, resource persons and donor agencies); (2) write a clear manual in the local language setting out all operational aspects; (3) set up a local-level support network to assist village communities to implement the new scheme, and (4) set up a national-level multi-agency reference group to analyse ground reality and improve implementation. Effective and sustainable scaling up requires a constant review, analysis and support, to enable communities to truly manage their own water resources.

Acknowledgements

The greatest debt is to the villagers of Khammam and Chittoor district, who gave their time and insights freely, in the hope that someone will pay heed and improve conditions at least for the other villagers yet untouched by the promise of improved water supplies.

The cheerful assistance provided by Dr. M. Snehalatha as she shared the field work is gratefully acknowledged, as are Dr. Tirupataiah of the Andhra Pradesh Academy of Rural Development (APARD), Hyderabad, Andhra Pradesh (AP), and Mr. Kulappa, AP coordinator of the Sector Reform initiative for the Water and Sanitation Program – South Asia (WSP-SA), for the long discussions on water policy and the implementation problems in AP that they so willingly endured.

I am especially grateful to the District Collectors, the Superintending Engineers of the Rural Water Supply Department, the Member Secretaries of the District Water and Sanitation Missions (DWSM), the Project Support Unit staff and consultants of Khammam and Chittoor districts, for making time for us and sharing their views, experiences and information.

The Engineer-in-Chief of Rural Water Supply (RWS) and Chief Engineer (RWS) in Hyderabad are also thanked for articulating their perceptions of the sector reform process in AP.

The greatest debt, gratefully acknowledged, is however to Ton Schouten of IRC Water and Sanitation Centre, Delft, for his patient guidance, willingness to help, but most of all, his ability to remain calm and friendly in the face of the intense provocation of repeatedly missed deadlines.

A. J. James

Mumbai
8 November 2004

Abbreviations

ADB	Asian Development Bank
AEE	Assistant Executive Engineer
AFARM	Association for Agriculture and Rural Management
AP	Andhra Pradesh
APARD	Andhra Pradesh Academy of Rural Development
APRLP	Andhra Pradesh Rural Livelihoods Programme
ARWSP	Accelerated Rural Water Supply Programme
BAIF	Bharatiya Agro Industries Foundation
BDO	Block Development Officer
CAG	Comptroller and Auditor General of India
CDS	Centre for Development Studies
CPWSS	Community Piped Water Supply Scheme
DANIDA	Danish International Development Agency
DC	District Collector/Divisional Commissioner
DDP	Desert Development Programme
DEE	Deputy Executive Engineer
DFID	Department for International Development (Government of the UK)
DOLR	Department of Land Resources
DPAP	Drought Prone Areas Programme
DPIP	District Poverty Initiatives Program
DPMU	District Project Management Unit
DPMU	District Project Monitoring Unit
DPR	Detailed Project Report
DWSC	District Water and Sanitation Committee
DWSM	District Water and Sanitation Mission
ESO	External Support Organisations
FC	Fully Covered (Habitations)
GLSR	Ground Level Service Reservoir
GO	Government Order
GOAP	Government of Andhra Pradesh
GOI	Government of India
GP	Gram Panchayat
HRD	Human Resource Development
HUDCO	Housing and Urban Development Corporation
HWSC	Habitation Water and Sanitation Committee
IAS	Indian Administrative Service
IEC	Information, Education and Communication
IWDP	Integrated Wastelands Development Programme
JAC	Joint Action Committee

JEE	Junior Executive Engineer
KAWAD	Karnataka Watershed Development Programme
Lpcd	Litres per capita per day
LSGED	Local Self Government Engineering Department
M&E	Monitoring and Evaluation
MDO	Mandal Development Officer
MF	Maintenance Fund
MJP	Maharashtra Jal Pradhikaran
MLA	Member of the Legislative Assembly
MNP	Minimum Needs Programme
MOAC	Ministry of Agriculture and Cooperation
MOEF	Ministry of Environment and Forests
MORD	Ministry of Rural Development
MP	Member of Parliament
MYRADA	Mysore Relief and Development Agency
NABARD	National Bank for Agriculture and Rural Development
NAPO	Netherlands Assisted Programme Office
NC	Not Covered (Habitations)
NDWM	National Drinking Water Mission
NEWAH	Nepal Water and Health
NGO	Non Governmental Organisation
NSS	No Safe Source (Habitations)
NSSC	National Scheme Sanctioning Committee
O&M	Operation and Maintenance
OHSR	Over Head Service Reservoir
PC	Partially Covered (Habitations)
PHED	Public Health Engineering Department
PIA	Project Implementation Agency
PIP	Project Implementation Plan
PLA	Participatory Learning and Action
PMC	Project Management Cell
PMGY	Prime Minister's Gramodaya Yojana
PMU	Project Management Unit
PR&RD	Panchayati Raj & Rural Development
PRA	Participatory Rural Appraisal
PRED	Panchayati Raj Engineering Department
PRI	Panchayati Raj Institutions
PSU	Project Support Unit
PWS	Piped Water Scheme
RGNDWM	Rajiv Gandhi National Drinking Water Mission
RHEP	Rural Health and Environment Programme
RIDF	Rural Infrastructure Development Fund
RNE	Royal Netherlands Embassy
RWS	Rural Water Supply

RWS	Rural Water Supply
RWSS	Rural Water Supply and Sanitation
SEUF	Socio-economic Units Foundation
SEWA	Self Employed Women's Association
SHG	Self Help Group
SIDA	Swedish International Development Agency
SIDBI	Small Industries Development Bank of India
SIMAL	System for Integrated Monitoring Assessment and Learning
SRPP	Sector Reform Pilot Projects
SWSM	State Water and Sanitation Mission
UP	Uttar Pradesh
VWSC	Village Water and Sanitation Committee
WALTA	Water Land and Trees Act
WB	World Bank
WHO	World Health Organisation
WOTR	Water Organisations Trust
WSP	Water and Sanitation Program
WSP-SA	Water and Sanitation Programme – South Asia
ZP	Zilla Parishad

1. India: a Brief Profile

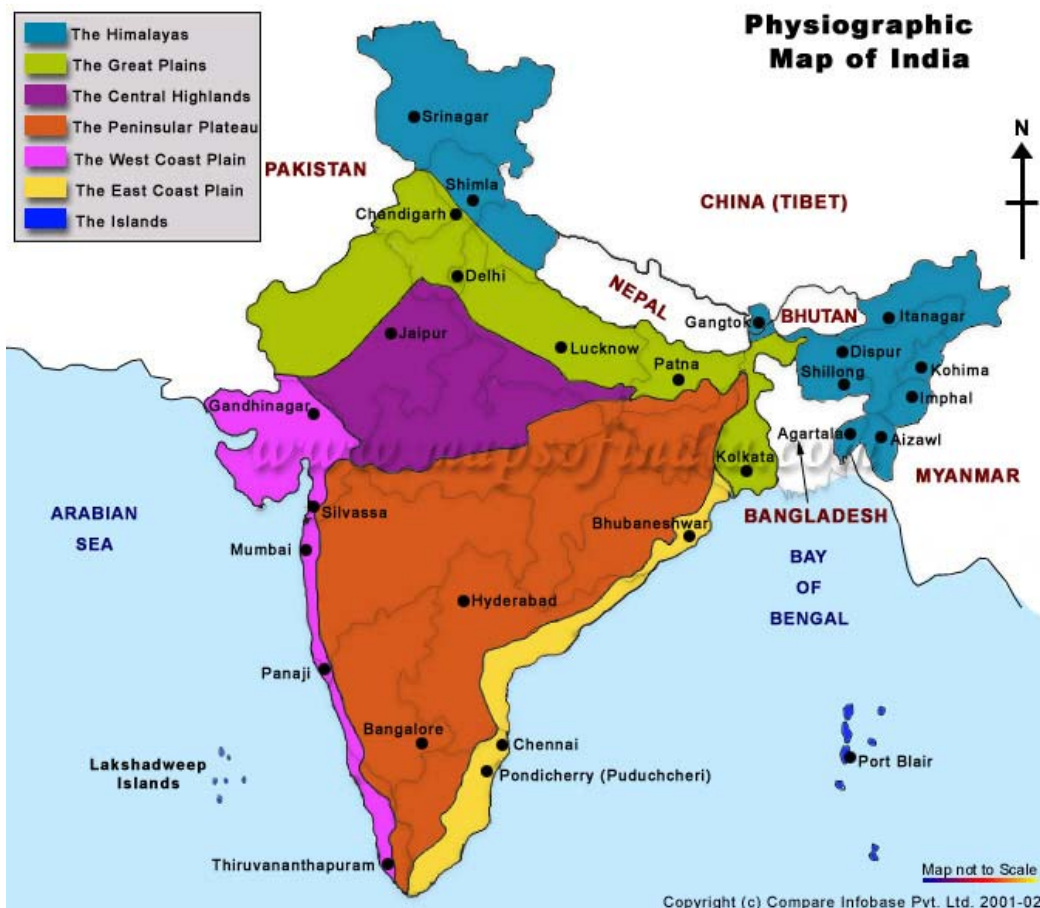


Figure 1.1: India, physiographic details

1.1 The Land and its Resources

India is well-known for its 1 billion plus and-still-growing population, about 70% of which live in villages. India's population has been growing at around 2% per annum from the latter part of the 20th century, although the rate has decreased in the last decade. Those who have travelled in the country, however, know that apart from congested urban centres, there are vast sparsely populated expanses of a varied landscape. India's land mass of nearly 3.3 million square kilometres is about a third of the geographical area of the USA, and about two-thirds that of Europe. In addition to the 7,000 kilometre coastline forming its southern peninsular boundary, the Thar dessert to the west and the Deccan plateau in its centre, there are the fertile Gangetic plains in the northern belt, the tea plantations of the northeast and the majestic Himalayas that span the entire northern boundary with Tibet and China (see Figure 1.1). More than 50% of the area is arable land, nearly 25% under forest and woodland, about 5% under meadows and pastures and 1% under permanent

crops. India also has large mineral reserves, including the fourth largest reserves of coal in the world, and iron ore, natural gas, manganese, mica, bauxite, titanium, natural gas, diamonds, petroleum and limestone.

India is also well-known for its climate, although the general perception of a hot, dusty and humid land is not quite correct. It varies from a warm and humid tropical climate in the southern peninsula and the hot desert of the west, to a temperate climate in the north, reaching up to the extreme cold of the Himalayan foothills (Figure 1.2). Large tracts of southern, western and central India are semi-arid, despite the two monsoons that bring rain to the sub-continent: the main 'south-west' monsoon that starts in June to sweep up from the south-west (Kerala) and brings rain to the entire country through September, and the 'retreating' monsoon that sweeps down from the north-east and brings rain from October to November. Yet, when this seasonal replenishment of ground and surface water fails, India experiences drought. In central and western semi-arid India, two in every five years is usually a low-rainfall year, with attendant drought. Most villagers are historically used to drought and it is very much a part of the climatic landscape of India.

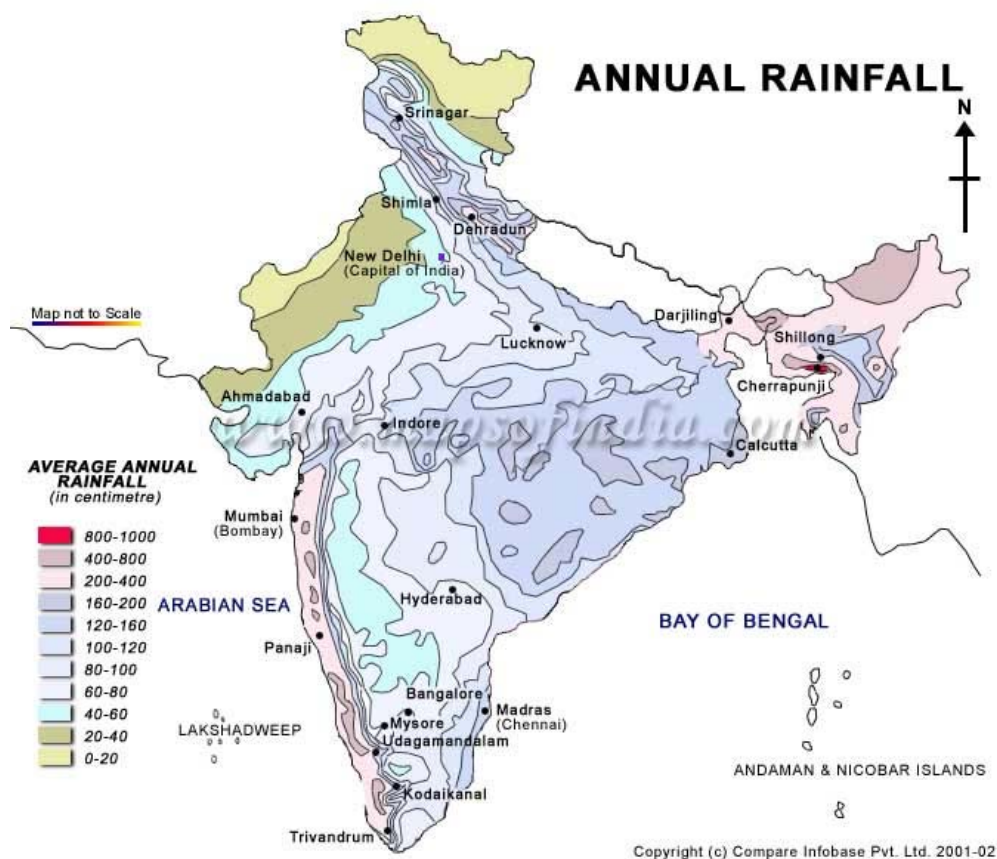


Figure 1.2: Average Annual Rainfall in India

The large and growing population is placing an increasing strain on India's large natural resource base, evidenced by wide-spread deforestation, soil erosion, overgrazing, desertification, and air, water and land pollution. Environmental problems rose into public consciousness only recently with increasing media reporting of India's growing environmental problems.

Although Hindi is the official language and spoken by around 30% of the people, mostly in northern India, several languages are spoken in other parts of the country, including Tamil, Telugu, Malayalam and Kannada in south India, Bengali, Bhojpuri and Oriya in eastern India, Gujarati in western India, and Marathi in central India. The Indian Constitution officially recognises 18 languages and around 500 dialects (languages without a script). English, however, is understood in all the major cities and in most urban areas.

1.2 Economy

The Gross Domestic Product of India in 2002-2003 (at current prices) was Rs. 25,238 billion (450 billion Euros), which has been growing at the rate of around 6% since 1991, when India embarked on a major economic liberalisation programme, in sharp contrast to the protectionist regime it had followed since its political Independence from Great Britain in 1947.² This early period of industrialisation and infrastructural development laid the foundations for this spurt in economic growth, while maintaining an impressive savings rate of around 22-23%, which is one of the highest in the world.

India's status as a developing country is because of its poor human development performance – reflected in a Human Development Index rank of 127.3 The infant mortality rate is high (72 per 1000 live births in 2000), and the life expectancy at birth is 59 years.⁴ India has a literacy rate of 65%, which is more for men (73%) than for women (54%).⁵ Part of the reason for the poor human development performance, despite the economic growth and savings rate, is corruption and inefficiency. Transparency International recently ranked India close to the bottom of 149 countries on account of corruption. The inefficiency is not difficult to understand given the size of the population and bureaucracy, the inadequate infrastructure and increasingly ineffective systems of governance.

1.3 Government and Administrative Units

India has a three-tiered federal democracy, with a central, state and district governments. It has a parliamentary system of government where the President is the Chief Executive (Head of State), overseeing the bureaucracy, but the Prime Minister is the head of Government, comprising elected representatives. There are two houses of Parliament,

² From http://www.mospi.nic.in/stat_pr.htm.

³ From hdr.undp.org/statistics/data/cty/cty_f_IND.html

⁴ From <http://planningcommission.nic.in/data/dataf.htm>

⁵ From India's Census 2001, quoted in *The Economic Times*, Saturday 10th July 2004.

modelled on the Westminster system of government, with the lower house of elected representatives (called the Lok Sabha), and the upper house of nominated members (called the Rajya Sabha).

The country is divided administratively into 29 states and 6 union territories - smaller areas governed usually by a Lieutenant Governor (Box 1.1 and Figure 1.3).

www.mapsofindia.com



Figure 1.3: India – States and Union Territories

Box 1.1: States and Union Territories in India

States

Andhra Pradesh
Arunachal Pradesh
Assam
Bihar
Chhatisgarh
Delhi
Goa
Gujarat
Haryana
Himachal Pradesh
Jammu and Kashmir
Jharkhand
Karnataka

Kerala

Madhya Pradesh
Maharashtra
Manipur
Meghalaya
Mizoram
Nagaland
Orissa
Punjab
Rajasthan
Sikkim
Tamil Nadu
Tripura
Uttar Pradesh

Uttaranchal

West Bengal

Union Territories

1. Andaman and Nicobar
2. Chandigarh
3. Dadra and Nagar Haveli
4. Daman and Diu
5. Lakshadweep
6. Pondicherry

Central Government

The Prime Minister heads the national government in India, along with a cabinet of ministers. Each Union or central government Minister is in charge of a central Ministry, assisted by a senior career bureaucrat from the Indian Administrative Service (IAS), called a Secretary (to the Government of India). Each Secretary is assisted by other junior secretaries to run the several Departments that comprise each Ministry. The Ministry of Rural Development (MORD), for instance, comprises the Departments of Rural Development, Land Resources and Drinking Water Supply. While these are all senior Civil Service posts, there are several Directors, Joint Directors and Deputy Directors in each Department, who take care of day-to-day administrative issues. Senior IAS officers are usually in charge of drafting policies, deciding on budgets, preparing answers to queries raised in Parliament, formulating new government schemes, projects and programmes, and collaborating in donor-assisted programmes.

States and State Governments

Some states are as large as some small countries of the world. Andhra Pradesh, for instance, has a population of 75.7 million⁶ and covers an area of 276, 754 square kilometres⁷ (Figure 1.4). Each of India's State governments is headed by a Chief Minister, with a cabinet of Ministers, who are answerable to the elected Members of the Legislative Assembly (MLAs).

⁶ www.censusindia.net/profiles/apd.html

⁷ www.aponline.gov.in/quick%20links/apfactfile/apfactmain.html

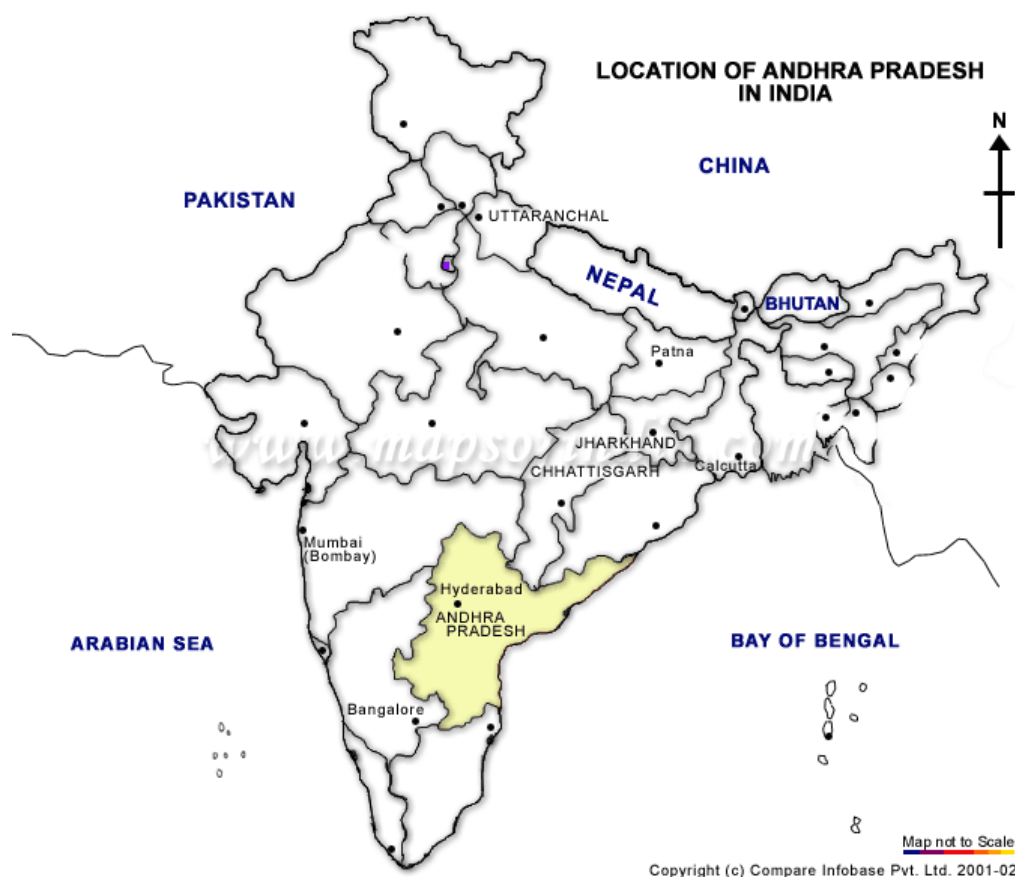


Figure 1.4: The State of Andhra Pradesh

State government Ministers head Departments (instead of Ministries), which may comprise several smaller departments depending on the size of the state and administrative convenience, and can therefore vary across different states. Thus, the state of Andhra Pradesh has a Minister for Panchayati Raj and Rural Development (PR&RD), while the state of Karnataka has a Minister for Panchayati Raj and another Minister for Rural Development. Each state government Minister is responsible for a state government department (sometimes called 'Line Department') and is assisted by a career bureaucrat from the IAS, called a Secretary – or, depending on seniority, a Principal Secretary or Principal Chief Secretary. In Andhra Pradesh, for instance, Mr. Samarjit Ray retired in June 2003 as Principal Chief Secretary (PR & RD), but was replaced by Mr. Nagi Reddy, whose designation is Secretary (PR & RD), as he is not as senior as Mr. Ray was. Each Secretary is usually assisted by Commissioners, Joint Commissioners, Additional Commissioners, and Assistant Commissioners, assisted in turn by a range of Section Officers, heading different Sections within the Department (Figure 1.5).

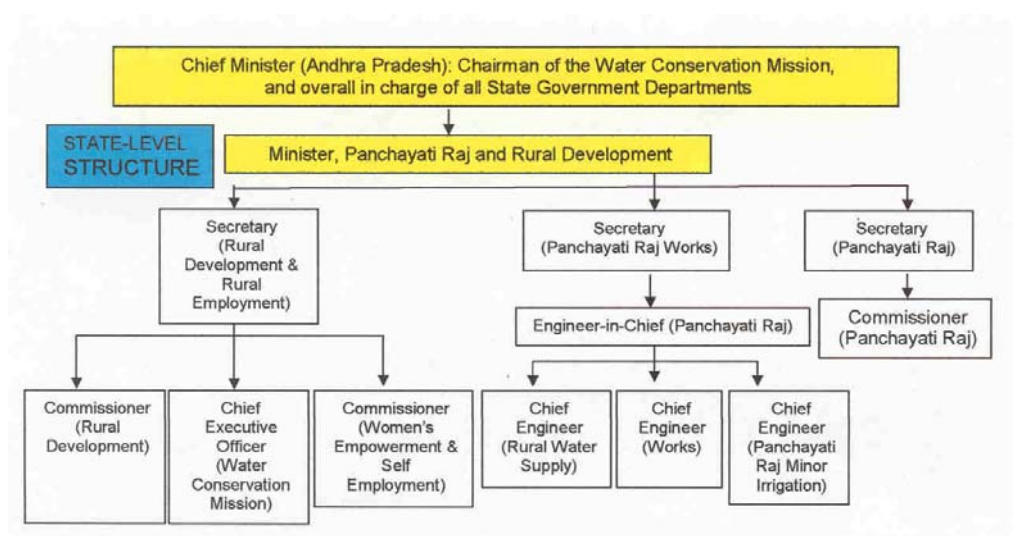


Figure 1.5: The Panchayati Raj & Rural Development Department, Government of Andhra Pradesh

As Figure 1.5 shows, the operational head of rural water supply in the state government is the Chief Engineer (Rural Water Supply), who reports to the Engineer in Chief (Panchayati Raj), who is responsible in turn to the Secretary (Panchayati Raj Works) who finally reports in turn to the Minister for Panchayati Raj and Rural Development.

Districts and District Government

Each state is broken up into several administrative districts. A district can be the size of a small sized country. Anantapur district in Andhra Pradesh, for instance, covers an area of 19,130 square kilometres⁸ and has a population of around 3.6 million⁹.

The bureaucratic head of a district is called the District Collector,¹⁰ while the political head is the President of the Zilla Parishad (or District Council),¹¹ which is a body of elected representatives, including the local MLA. A new post created is that of the Chief Executive Officer (CEO) of the Zilla Parishad (ZP), filled by a career bureaucrat (Figure 1.6).

Each Line Department has a district-level head, such as the Superintending Engineer for the Rural Water Supply Department. Each department also has staff to carry out the implementation of work, such as Executive Engineers (EE), Deputy Executive Engineers

⁸ http://envfor.nic.in/naeb/sch/wsl/wsl_ap.html

⁹ http://www.censusindia.net/cendata1/show_data52.php3?j=120&j2=1&j1=28&j3=Andhra+Pradesh

¹⁰ This is an old colonial term, which actually referred to District *Revenue* Collector, from the days when this official was responsible for the collection and passing up of land revenue to the British Government in India. Sometimes abbreviated to 'DC', the District Collector is also referred to in some states as the Divisional Commissioner, which also conveniently abbreviates to DC.

¹¹ In Andhra Pradesh, these are called Zilla Praja Parishads or District *People's* Council.

(DEE), Assistant Engineers (AE), Junior Engineers (JE), Pump Operators, etc. besides clerical staff. All district heads of line departments report to the CEO, ZP, who reports in turn to the District Collector.

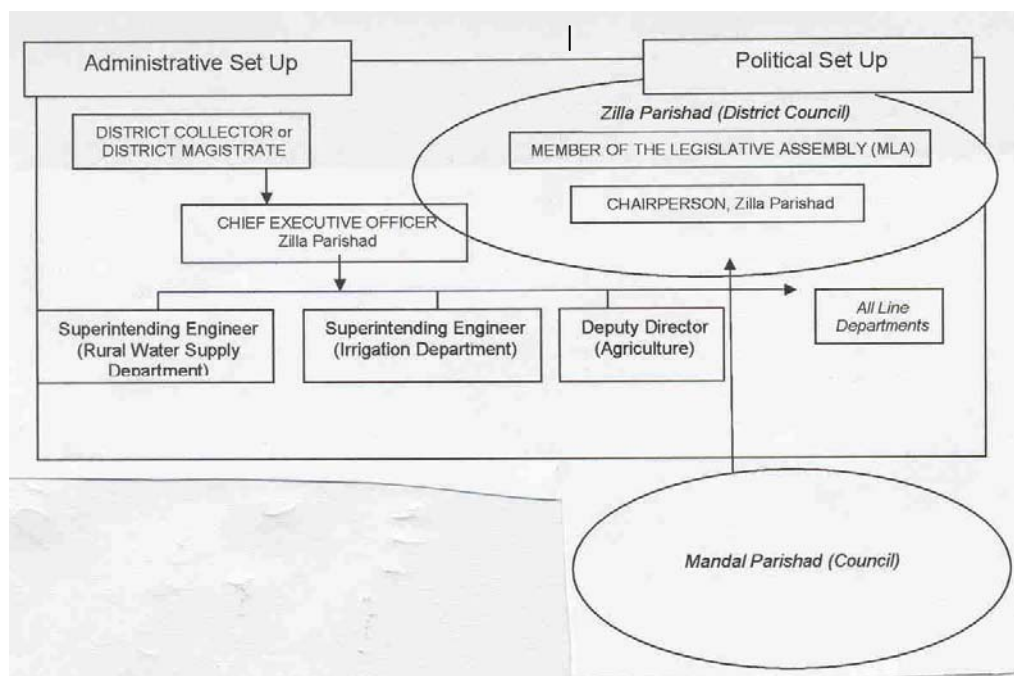


Figure 1.6: District government organisation

A District is divided into several Community Development Blocks, each of which is headed by a Block Development Officer (BDO). Each Block, in turn, is usually divided into several Tehsils, headed by a Tehsildar. In Andhra Pradesh, however, there is a unique administrative unit below the block called a Mandal, which is usually larger than a tehsil, whose administrative head is the Mandal Development Officer (MDO), to whom the BDO reports.

It is probably apparent that the political and administrative set ups are closely interlinked at the district and sub-district levels. For example, the CEO of the Zilla Parishad is a bureaucrat, although the Zilla Parishad itself is made up of elected representatives, including representatives from the Mandal (Praja) Parishads from the different mandals within the district. The Mandal Parishad or Council comprises the heads of the Panchayat Samitis, and some co-opted resource persons. Each Panchayat Samiti, in turn, has representatives from various Gram Panchayats (Village Councils), which is the basic tier of local government (see Figure 1.7).

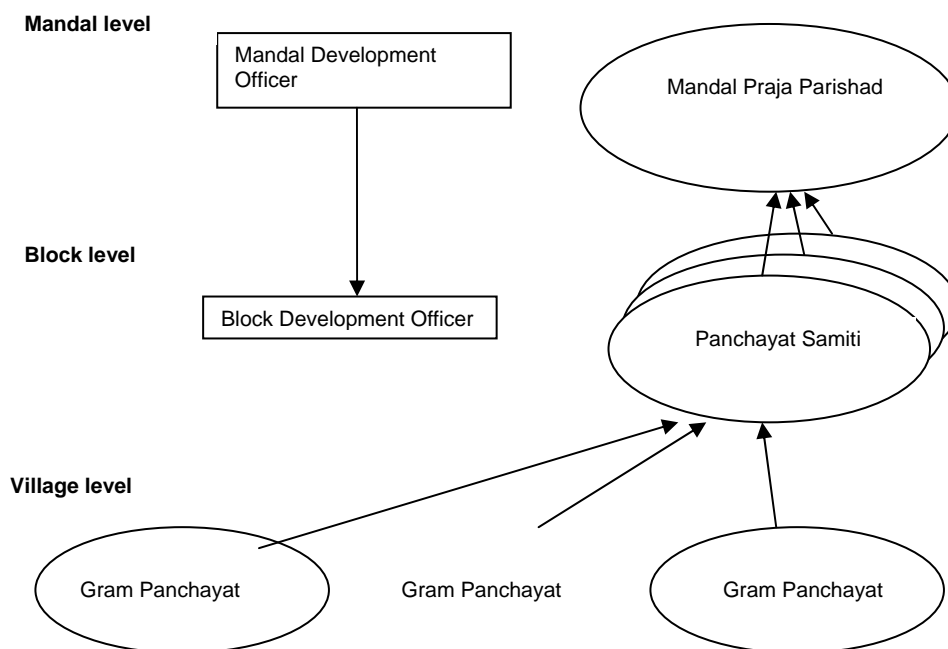


Figure 1.7: Sub-district government organisation

The upward arrows in Figure 1.7 denote representatives being sent up from lower levels of the political set up while the downward arrow shows that the Mandal Development Officer has several BDOs under his or her charge.

Village Government

Gram Panchayats are headed by a Sarpanch, and assisted by a Village Administrative Officer (VAO) or *thalati*.¹² A Gram Panchayat (GP) usually corresponds to a Revenue Village, which is a colonial term referring to a cluster of one or more habitations. Gram Panchayats can vary in size from 50 to 2,500 households. Each GP has members from the cluster of villages or habitations that make up the revenue village. In fact, the Gram Panchayat is usually housed in the largest habitation of the revenue village. Further, each habitation may have several small hamlets (which are variously called *palli*, *phalia*, *dhaani*, etc. in different parts of India). The General Body comprising all adult members of the villages in the Panchayat is called a Gram Sabha, discusses and decides on issues of relevance to the GP.

¹² *Thalati* is another local term for the VAO.

This is the structure of the Panchayati Raj – or the governance by panchayat (an old Sanskrit term referring to the council of ‘five’ (paanch) elders), which was supposed to look after the interests of traditional ‘village India’ (see Figure 1.8).

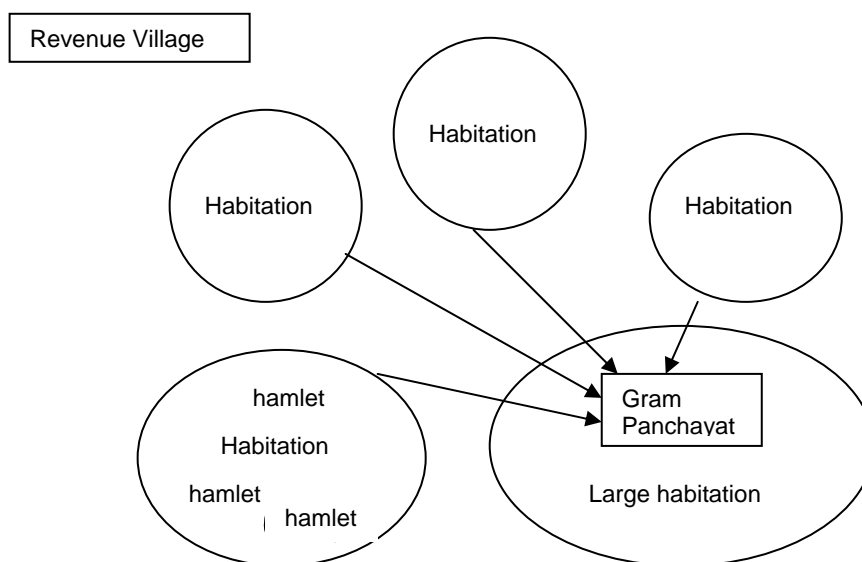


Figure 1.8: Village level organisation

The 73rd and 74th Constitutional Amendments

The growth of centralised government, intensified by the five-year planning initiated by post-independence Indian governments, contributed to the decreasing importance of GPs. With the decline of traditionally wealthy landlords, the GPs became more dependent on external funding, that was however decided by politicians and bureaucrats in national and state capitals.

In 1993 and 1994, the central Government enacted some path-breaking legislation to devolve decision-making power regarding several subjects (of legislation and decision making) from the state to the local government - Gram Panchayats, Panchayat Samitis and Zilla Parishads - or Panchayati Raj Institutions (PRIs). Thus, in rural India, Gram Panchayats were given 29 subjects (including rural water supply and sanitation) as per the 73rd Constitutional Amendment of 1993, while Corporations, local Municipalities and Town Panchayats in urban India were transferred around 17 subjects under the 74th Constitutional Amendment of 1994.

These Amendments were to be ratified and facilitated by the state governments, but progress has been varied and some states have still not fully transferred administrative responsibility along with financial control and decision-making authority. Madhya Pradesh

and Kerala are on the forefront of states that have taken political, financial and administrative decentralisation seriously. The then Government of Andhra Pradesh did not push the decentralisation agenda very much, and it remained a token exercise for the most part (Baumann, 1999).

1.4 Synthesis

The vastness of the country makes generalisations difficult, and it remains a contradiction of plentiful natural resources and problems of resource scarcity, floods and famines, rich and poor. The steel frame of the bureaucracy is seen to be most effective at policy framing national level and less effective at the operational, district, and local levels. Political patronage and corruption contribute to the contradiction of one of the highest savings rates in the world and low investment and economic growth, and consequently a low per capita GDP that keeps India in the list of poor developing countries.

The latest contradiction is that between a centralised state bureaucracy and political apparatus that is loathe to relinquish control over decision-making and finances, and constitutional amendments enacted to decentralise decision-making and financial control to local governments (Panchayati Raj Institutions).

2. Rural Domestic Water Supply

2.1 Rainfall and Water Resources

India can be divided into a series of eco-zones, each with widely varying availability of water resources, from the arid deserts of Rajasthan in Western India, the semi-arid Deccan plateau in central India, the fertile coastal regions in the South, and the deltaic regions of north and north-eastern India, to the Himalayan foothills in the northern states of Jammu and Kashmir, Uttaranchal, Uttar Pradesh and Arunachal Pradesh (see Figure 2.1 and Box 2.1).

Box 2.1: Water Resources Situation in India

Average annual rainfall in India is about 1170 mm, most of it falling in the 3-4 monsoon months in a year. Considerable temporal and spatial variation exists, however, and both floods and droughts are possible in the same area. Rainfall is highest in northeastern India and some deltaic areas, being more than 1,000 mm. But the rain shadow area of the Deccan plateau and in western India (Rajasthan, western Uttar Pradesh, Punjab and Haryana), has low rainfall at 300 – 800 mm a year.

Annual average surface run off generated by rainfall and snowfall is around 1869 billion cubic metres, of which only 37% can be actually mobilised, given the high variability of river water flow and limited number of suitable reservoir sites.

Rechargeable annual groundwater is around 452 billion cubic metres, and around 30% of the potential has been tapped overall, but there are wide regional variations and many areas have already exploited almost all of their dynamic recharge. Depleting groundwater tables can be found in Punjab, Haryana, Rajasthan, Gujarat, western Uttar Pradesh, and all the Deccan states (Maharashtra, Karnataka, Andhra Pradesh, and Tamil Nadu). (World Bank, 1999b, pp. 7-8)

2.2 Traditional Systems of Rural Water Supply

Most of India's rural population has depended, historically, on water supplied privately – through private wells, community managed open wells, private wells, tanks, ponds and so on – and recharged using the monsoon rains. A variety of ingenious water harvesting

systems have been developed in each eco-zone for over generations, to cater for the drinking water and irrigation needs of villages.¹³ Some of these are well-designed water harvesting structures (see Box 2.2) meant for private use and hence did not require community management.



Figure 2.1: Eco-zones of India. Source: <http://www.rainwaterharvesting.org/eco/eco-region.htm>

Others are more complex and were managed by the village community, or even groups of villages. Technology was relatively simple and used gravity flow methods to recharge a surface water body, and not the pumps, pipes, tanks and taps of modern water supply systems. Management, consequently, centred on the construction of these structures, maintaining them and keeping them in good repair (usually at the start of every monsoon), evolving community norms and responsibilities for water use and maintenance, and

¹³ The Centre for Science and Environment, an NGO in New Delhi, has been documenting these traditional practices since the mid 1980s, and have built up a huge database of structures, practices and individuals involved in their modern revival. See *Dying Wisdom* and the CSE website www.cseindia.org for more details.

ensuring that these norms were respected. Such traditional community-managed systems were in operation throughout the country and provided drinking water (even through the severe recorded droughts of the 19th century). Three of these are described briefly below.¹⁴

Kuhls of Himachal Pradesh (north India) – earthen water channels in mountainous terrain that carry water from glaciers to villages. *Kuhls* are a traditional irrigation system consisting of surface channels diverting water from natural flowing streams, using a headwall, irrigating about 20 hectares and servicing 6-30 farmers. Village communities constructed *kuhls* and appointed a manager (called a *Kohli*), to look after repairs and distribute the water.

Box 2.2: Some traditional water harvesting techniques

Naula (Uttaranchal): a surface water harvesting method typical to the hill areas, comprising small wells or ponds where water fills by making a stone wall across a stream.

Khatri (Himachal Pradesh): water harvesting structures (10x 12 feet and 6 feet deep) carved out of the hard rock mountain by specially trained masons. Individual and community *katris* are built, separately for animals and washing, where rain water is collected from the roof using pipes, and for human consumption, using seepage through rocks.

Ooranis (Kerala): small earthen structures (tanks) which irrigate only a few acres of land, but are suited to the irregular topography and absence of large open spaces (as in the rest of south India).

Dongs (Assam): individually owned ponds constructed to harvest water for irrigation.

Virdhas (Gujarat): shallow wells dug in low depressions all over the Banni grasslands in western Gujarat, used by nomadic *Maldhari* tribesmen.

¹⁴ There are, in addition, the *zabo* and *cheo-ozih* in Nagaland (north eastern India), the bamboo drip irrigation of Meghalaya (north eastern India) and the *Apatani* wet-rice in Arunachal Pradesh (north eastern India), and several eco-zone specific systems. Much more documentation is available in *Dying Wisdom* (CSE, 1997) and www.rainwaterharvesting.org, the rainwater harvesting site of www.cseindia.org.

Surangam (Kerala): a horizontal well excavated in hard laterite rock formations of the northern Malabar region, till water is struck and flows through the tunnel into an open pit constructed outside the *surangam*. Usually several subsidiary *surangams* are excavated inside the main one.

Source: www.rainwaterharvesting.org

Phad irrigation system in Maharashtra (central India) – around 300-400 years old, and built on three major rivers in Maharashtra in central India. Starts with a *bandhara* (diversion weir) built across the river, from where a system of canals (*kalvas*) branch out and break up further into distributaries (*charis*) to different areas of the agricultural command area, usually divided into 4 blocks (*phads*). Field canals (*sarangis*) carry water to individual fields with excess water being drained into escape channels (*sandams*) back to the *charis* and *kalvas*. Only one type of crop is grown in a *phad* and every year, the village decides which *phads* to use and which to leave fallow, so as to ensure a healthy crop rotation system that maintains soil fertility and reduces the dangers of salinity and water logging.

Tank irrigation system in south India - **Kere** in central Karnataka, **Cheruvu** in Andhra Pradesh and **Eris** in Tamil Nadu are ‘tanks’, which was the predominant traditional method of irrigation. Rainfall or weirs built across streams (*anicuts*) fed a series of tanks, a few kilometres apart, built so that the overflow (and seepage) of one tank refills the second, all the way down to a stream. Village communities, ages ago, dug these tanks, made embankments, and sluices and a flood weir, and managed these systems. A tank manager (called a *neerukatti*) was usually appointed to repair and maintain the system, and distribute water. Especially since the 1950s, however, these sources have been threatened by increasing private sector investment in tube wells for irrigation, which reduced the recharge into open wells, causing water supply shortages during summers and during droughts. Women typically bore the brunt of these shortages, by having to walk long distances to fetch water for drinking and other domestic purposes.

While these were in operation for several centuries these are local level structures and systems, covering a few groups of villages. Investments in larger water infrastructure including dams, aqueducts and canals were undertaken by kings and rulers. The structures created by the Mughals and the British rulers are the most recent examples of investment in water supply by the political state.

2.3 Government Investment in Water Supply

There has been significant state investment in water infrastructure from British and pre-British structures created in the 19th and early 20th centuries, a lot of which is still serviceable, and major hydroelectric and other water infrastructure investment in the 1950s and 1960s. These investments, nevertheless, were to support irrigated agriculture, since

land revenue from crops was a major source of colonial and pre-colonial state incomes, and not drinking water supply, which came through community or private systems.

The Indian government began to install wells to augment drinking water supplies in the 1950s, in recognition that basic drinking water needs were not being met all over the country, and on the premise that provision of safe drinking water is the responsibility of the government. Indeed, the Indian Constitution enshrines the right to adequate potable water. Rural water supply is a state subject according to the Constitution, although the GOI began with a *national* water supply and sanitation programme during the First Five Year Plan (1951 – 1956).

Soon after, however, GOI began allotting resources and financial authority to the state governments to provide drinking water to rural areas and small urban towns. The first major push to rural water supply provision came from the early 1970s, with the Accelerated Rural Water Supply Programme (ARWSP) that gave 100% grants to state governments to accelerate the implementation of schemes in problem villages. Technology changed from community water supply schemes fed by rivers and canals to hand pumps fitted on bore wells, and large multi-village community water supply schemes fed by bore wells. The ARWSP continues to this day as the main vehicle for GOI support to state government efforts.

The second major push came with the setting up of the National Drinking Water Mission (NDWM) in 1986, which later became the Rajiv Gandhi National Drinking Water Mission, and housed in the Ministry of Rural Development. Among other initiatives, the Mission issued comprehensive guidelines to implement the ARWSP (in 1986), helped formulate the National Water Policies of 1987 and 2002 (compared in Annexure 1), spearheaded the Sector Reform Pilot Projects in 1999, and was responsible for implementing the *Swajaldhara* programme, which effectively scaled up Sector Reform to the entire country (see Table 2.1).

Table 2.1: Institutional development of drinking water supply systems in India

1950	Constitution of India pronounces water to be a State subject.
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- 1954 First national water supply and sanitation programme started, during the first Five Year Plan (1951 – 1956), albeit as part of the government's health plan.
- 1956 – 1972 GOI allots resources to state government to develop and strengthen the state public health engineering department (PHED). Rural water supply schemes extended to include small urban towns and villages with water scarcity targeted on a priority basis.
- 1968 GOI gives states (some) financial authority to sanction rural water supply schemes.
- 1972 GOI introduces the Accelerated Rural Water Supply Programme (ARWSP) to assist States and Union Territories with 100% grants to accelerate the implementation of schemes in problem villages.
- 1974 ARWSP discontinued and the Minimum Needs Programme (MNP) introduced in states.
- 1977 ARWSP revived when the progress with regard to provision of safe drinking water to the identified problem villages under MNP was not found to be satisfactory, and aims to tackle unreached areas without access to safe drinking water, sustainability of the systems and sources and preservation of quality of water by institutionalizing water quality monitoring and surveillance, through a catchment area approach.
- 1986 National Drinking Water Mission (NDWM) set up to cover 137,155 residual problem villages (in April 1986) with safe drinking water, evolve an appropriate mix of technology, improve performance and cost effectiveness of on-going programmes, create awareness about the use of safe drinking water and take conservation measures to sustain the supply of water.
- Comprehensive guidelines issued (for the first time) to implement the ARWSP.
- 1987 National Water Policy that states that national, and not state or regional, perspectives will govern the water resources planning and development and that drinking water has first priority while planning multipurpose water supply schemes.

1991	NDWM of 1986 renamed the Rajiv Gandhi National Drinking Water Mission.
1996-99	Review of India's water resources, jointly with the World Bank and other donor agencies.
1999	Start of the Sector Reform Pilot Projects, introducing community based management of rural water supply in the government sector.
2002	<i>Swajaldhara</i> programme announced, scaling up Sector Reform Pilot Projects to a country-wide programme of community based management of rural water supply.
	Revised National Water Policy formally adopted by the National Development Council, comprising all heads of state governments and GOI.

2.4 Main Actors In Rural Water Supply

Central Government

Central government interventions in water resource use and management are divided between four Central government Ministries: the Ministries of Water Resources (looking after overall water use, major and minor irrigation, groundwater development, and international and inter-state water sharing), Rural Development (drinking water supply and watershed development), Environment and Forests (pollution and watershed development) and Agriculture (irrigation and watershed development).¹⁵ Note that the activities carried out by these different Ministries affect the local water supply situation – even though only the Ministry of Rural Development is explicitly concerned with rural drinking water supply.

The Rajiv Gandhi National Drinking Water Mission (also known as the Department of Drinking Water Supply) in the Ministry of Rural Development is the apex body in the country overseeing rural drinking water supply. The RGNDWM is headed by a Mission Director of the rank of Joint Secretary who reports to the Secretary, Ministry of Rural Development, who reports in turn to the Union Minister of Rural Development in the Government of India.

State Governments

State governments have the task of implementing rural drinking water schemes ranging from providing hand pumps to single-village and multi-village piped water schemes. The latter are commonly called Community Piped Water Supply Schemes (CPWSS). The nodal

¹⁵ See Annexure 2 for details of the responsibilities of these various Ministries.

department at the state government level is usually the Department of Rural Water Supply (RWS) or the Public Health Engineering Department (PHED).

Within States, the Department of Irrigation is in charge of developing and maintaining major, medium and minor irrigation projects as well as groundwater development, while the Department of Panchayati Raj and Rural Development, the Forest Department, and the Department of Agriculture implement watershed-based development programmes. In addition, the Department of Finance and Planning oversees the work of the state remote sensing agency, which is in charge of investigating and proposing areas in the state for water management, afforestation, etc.

Again, note that different Departmental activities impact the local drinking water situation, even though the overt responsibility lies only with the State Government Department for Rural Water Supply (RWS). The need for coordination at both central and state government levels – and indeed between these two tiers of government is critical to effective and sustainable drinking water supplies.

External Support Organisations and non-governmental organisations

Several bilateral and multi-lateral donor organisations (collectively called external support organisations or ESOs) fund rural water supply projects in different states in the country. Typically, ESOs implement projects either through their own staff or through NGOs in different districts. The main role of ESO supported projects is to provide demonstration and experimentation at the project level, including a demand-oriented approach, user participation, cost sharing and cost recovery (WB, 1999a, p. 9).

Private Agencies

Although far less common than ESO supported projects, some private organisations also fund and implement rural water supply schemes. For instance, in the district of Anantapur in Andhra Pradesh, the Satya Sai Water Supply Trust also constructs and maintains piped water systems using its own resources.

2.5 Rural Water Supply and Sanitation Coverage

The impact of government investment in rural water supply is reflected at least partly in the number of rural habitations that have been provided with safe drinking water. The RGNDWM has laid down the following norms for providing potable drinking water to the rural population (Table 2.2):

Table 2.2: RGNDWM Norms for Drinking Water Supply

- o **Human Consumption:** 40 litres per capita per day (lpcd) to meet the following requirements: Drinking (3 lpcd), cooking (5 lpcd); bathing (15 lpcd), washing

- utensils & the house (7 lpcd) and ablution (10 lpcd). For a family of 5 this works out to 200 litres per household per day.
- o **Animal consumption:** 30 lpcd in hot and cold desert ecosystems (in 36 districts already identified in the States of Andhra Pradesh, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka and Rajasthan).
 - o **Water source availability:** With normal output of 12 litres per minute, one hand pump or stand post is estimated for every 250 persons (unless there is no potable water source, in which case one hand pump can be provided for a habitation of less than 250 persons).
 - o **Coverage:**
 - **'Not covered' or No safe source' habitation (NC/NSS):** A habitation with no private or public drinking water source that is safe (i.e., without quality problems such as excess salinity, iron, fluoride, arsenic or other toxic elements or biological contamination), adequate (i.e., 40 lpcd for 250 persons or less), accessible to all, and within 1.6 km of the habitation (or 100 meter elevation in hilly areas).
 - **Partially covered (PC):** Habitations with a private or public drinking water source that is safe, accessible to all and within 1.6 km. in plains (and 100 meters in hilly areas) but with a capacity of only 10 to 40 lpcd.
 - **Fully covered (FC):** Habitations with a private or public drinking water source that is safe, adequate and accessible to all, within 1.6 km of the habitation (or 100 meter elevation in hilly areas).

These norms may be relaxed (e.g., per capita norms can be increased), with the prior approval of the Government of India, once all habitations in the state are covered, subject to the condition that beneficiaries of the relaxed norms are willing to share a part (which should not be less than 20%) of the capital cost and shoulder full responsibilities of subsequent O & M and replacement so as to meet their enhanced service expectations.

Source: Annual Report of the Ministry of Rural Development, Government of India (GOI, 2002a, p. 144 and the website of the Department of Drinking Water Supply of the Ministry (www.ddws.nic.in))

By April 2004, about 94% of all rural habitations were found to be fully covered, while about 5% were only partially covered and merely 0.5% was not covered by safe potable water (Table 2.3).

Table 2.3: Status of safe water supply in rural habitations in April 2004

Total habitations	1,422,293	Percentage to total
Fully covered habitations	1,339,828	94%

Partially covered habitations	222,493	5%
Not covered habitations	6,833	0.5%

Although these statistics should be reassuring, especially in a country the size of India, there are critical problems with water resource availability and maintenance of created infrastructure, both of which affect the sustainability of domestic water services. And the government is keenly aware of these limitations: The RGNDWM notes that habitations once surveyed and found to be 'fully covered', may no longer be so subsequently, especially during acute summer droughts (see Box 2.3). Other problems identified by the government in its assessment include:¹⁶

Box 2.3: Re-emergence of problem villages

A survey conducted in the state of Maharashtra in 1991-92 identified 35,216 habitations having water availability problems; a re-assessment survey undertaken in the year 1995-96 reported 50,806 problem habitations, showing a re-emergence of water problems in over 15,000 habitations.

Source: Upadhyaya (2004), p. 1

- Fast depletion of ground water level, which also increased the incidence of water quality problems like arsenic and fluoride.
- Sources running dry because of deforestation reducing recharge, and due to the lack of protection.
- Poor attention to maintenance, and a heavy emphasis on new construction.
- People not being involved in operating and maintaining water supply systems.
- Traditional water management practices and systems being neglected.

2.6 Financing of Rural Water Supply

By April 2000, about Rs. 34,000 crores (approximately 6.8 billion Euros) had been spent by the central and state governments for water supply provision since the First Five Year Plan. There are basically five sources for finances for rural water supply in any state, four from the Central Government (called centrally sponsored schemes) and one from the state government.¹⁷ In addition to centrally sponsored schemes, which are implemented by state governments with a 100% grant from the central government, the state government also implements some schemes where they share the costs with the central government.

¹⁶ These are the reasons mentioned under sub-section 1.3 'Need for Change' in the section on the ARWSP on the website www.ddws.nic.in and in the Annual Report 2001-2002 of the Ministry.

¹⁷ From the Annual Report 2001-02 of the Ministry of Rural Development, Government of India (GOI, 2002a).

Central Government

- **The ARWSP from the Ministry of Rural Development of the Government of India:** This is the main source of funds for the state governments. The Government of India released about Rs. 1,642 crores (325 million Euros) per year on average in the 5 years between 1997-98 and 2001-02 to state and union territories. And this amount is rising: The outlay for 2001-02 was Rs. 2,010 crores (400 million Euros).
- **Additional DDP funds from the Ministry of Rural Development of the Government of India for selected states** In addition, states which have been assessed to have drought-prone districts and are receiving developments funds from the Ministry of Rural Development under the Desert Development Programme (DDP), also receive an additional allocation from the DDP for drinking water supply equivalent to 5% of the total allocation of the ARWSP.
- **The Prime Minister's Gramodaya Yojana (PMGY):** This central government scheme launched in 2000-01 provides additional assistance to states for six selected basic minimum services (Primary education, Primary health, Rural shelter, Rural drinking water, Nutrition and Rural electrification) on a priority basis. The rural water supply programme of the PMGY (using 10% of total funds) aims to support projects and schemes for water conservation, rainwater harvesting, water recharge and sustainability of drinking water sources in areas affected by groundwater exploitation, drought, and water quality problems. State governments however can allocate more funds from the 35 percent of PMGY funds placed at their discretion.
- **The Rural Infrastructure Development Fund (RIDF):** This is a new facility created by the National Bank for Agriculture and Rural Development (NABARD), which is a grant that can be used by district collectors to pay for the creation of new rural infrastructure. However, NABARD reports that this financial facility is under-utilised for various reasons.

State government

- **Matching funds:** State governments are to provide matching funds to the central government allocation under the ARWSP. Since 1997-98, all states and Union Territories provided an average of about Rs. 2,178 crores (about 435 million Euros) per year.¹⁸

The state of Andhra Pradesh received a total of Rs. 132 crores (around 25 million Euro) under the ARWSP and the DDP allocation from the Ministry of Rural Development, while

¹⁸ State governments can however take loans for infrastructural development from various central government financial institutions including HUDCO, SIDBI, NABARD and also apply for specially-created reserve funds lying, for instance, with the Ministry of Finance, Government of India.

the State Government provided Rs. 109 crores (around 20 million Euro) as a matching grant.

2.7 Challenges of Water Availability

Despite the history of community and government investment in rural water supplies, the high official statistics of rural water coverage, and the vast sums of money spent on providing rural drinking water so far, there are still severe problems in India's water sector.

Water Resource Assessment

The conclusions of a comprehensive six-volume assessment of India's water resources in the late 1990s by a joint team from the World Bank and other donors and the Government of India (World Bank 1999c, Executive Summary) are particularly worrying:

'The historical situation in which relatively plentiful water resources have been used primarily for irrigated agriculture, with demands in other sectors insignificant relative to resource availability is changing rapidly and will continue to do so in the foreseeable future. Other sectoral demands over water will increase due to population ... as well as major changes in the composition of demand resulting from rising incomes, urbanisation and rapid industrialisation.'

'Water is becoming an increasingly scarce resource in India, yet it continues to be used inefficiently on a daily basis in all sectors, while sectoral demands (such as in drinking water, industry, agriculture and others) are growing rapidly in line with urbanisation, population increases, rising incomes and industrial growth. ... There is, furthermore, insufficient water available in most basins to address environmental and ecological considerations or ensure adequate supplies for other non-consumptive uses (such as navigation, religious observances and leisure needs).'

Water availability per capita was over 5,000 cubic metres per annum in 1950, but rapid population growth has pushed that figure down to hardly more than 2,000 cubic metres by the late 1990s, which is 40% of the 1950 figure (*id.*). Under current management practices, it is projected to go down to 1,500 cubic metres per annum per capita by 2025. But poor and variable rainfall, inequalities in endowments between different regions, difficulties in capturing run-off and water pollution compound the problem of declining aggregate figures.

Against this backdrop, the Ministry of Water Resources announced in 1999 that it intended to ensure that potable drinking water would be available in all 600,000 villages in India by 2004. And the RGNDWM announced the start of the Sector Reform Pilot Projects in 67 districts in the country in the same year.

Rural Drinking Water Sector Assessment

During the same period, however, the Annual Reports of the Comptroller and Auditor General (CAG) of India, the country's constitutionally-provided supreme audit institution, had given a strong warning. The 1998 Report had noted a host of problems with the government investments in water sector interventions, including deficiencies in planning, cost escalations, idle stocks, non-functional infrastructure and financial misappropriation. Some of its key findings are:¹⁹

- Deficiency in planning and unscientific identification of water sources have caused time overruns for water supply projects ranging from 2 to 16 years, and led to escalations in the costs upto Rs.117 crores (21 million Euro) in addition, forcing schemes to be abandoned.
- In 16 states materials worth Rs.85 crores (15 million Euro) were purchased in excess of requirement and were lying idle.
- Amounts such as advances, funds diverted to other schemes and those kept in personal/revenue deposits etc. (totalling about Rs. 385 crores (68.75 million Euro) for the period 1992 – 97) were classified as programme expenditure, and thus inflated achievements.
- Water treatment plants costing around Rs. 55 million (about 1 million Euro) to control fluorosis, remove excess iron and salinity were non-functional resulting in continued supply of unsafe water to the rural water population.

The report stressed, "The implementation and execution of the scheme was oriented towards incurring of expenditure rather than achieving the results and impact thereof. Financial shortcomings relating to diversion of funds to other schemes/activities not connected with the scheme, expenditure met out of ARWSP funds instead of state plan funds, advances treated as final expenditure though not actually spent, suspected misappropriation of funds, inadmissible payment of departmental charges were noticed during audit."²⁰

In 2002 - three years after Sector Reform Pilot Projects had started, and just before the *Swajaldhara* programme was announced by the GOI - reviewing years of water supply planning and negligence, the CAG reported to Parliament in 2002 that "in terms of providing adequate and potable water to the rural population the picture was far from satisfactory, despite incurring an expenditure Rs.32,302 crores [about 6 billion Euros] on the Rural Water Supply Programme since the First Five Year Plan." The major findings of the report are:

- As of April 2001, about 20,000 habitations do not have any source of water, while 155,000 habitations remained only partially covered and 73,197 problem habitations have re-emerged in 7 States, which negate the impact of the programme. These

¹⁹ These are from Upadhyaya (2004), which provides a good summary of the main report (*for details: <http://cag.nic.in>*).

²⁰ Quoted in Upadhyaya, 2004.

figures will go up further if one takes into account the significant re-emergence of PC/NC habitations, despite their reported coverage in many States. In the present monitoring system of the Ministry, this negative coverage was not being accounted for.

- Water treatment plants, installed at a cost of Rs.16.32 crores (3 million Euro) to control fluorosis, excess iron and salinity were non-functional.
- Poor performance of water quality testing laboratories defeated the objective of providing safe drinking water to the rural population in the affected areas.
- Even though there were habitations having no source of drinking water, Rs.283.90 crores (51 million Euro) were spent on coverage of partially covered habitations during 1997-2001, contrary to the priority norms of covering no source habitations first.
- Significant components of the Programme such as Human Resource Development and Information, Education and Communication failed to achieve the objectives of creating awareness on use of safe drinking water and imparting training to the local population.
- Application of funds without adequate planning and scientific identification of water sources led to abandonment of 2,371 schemes midway in 19 States, costing Rs.197.52 crores (35 million Euro) . Scientific methods of source selection were not adopted in 10 States, causing failure of the schemes and rendering Rs.64.71 crores wasteful.
- Diversion of funds to activities not connected with the programme (of Rs.86 crores or 15 million Euro), unauthorised retention of funds in Civil/Revenue/Public Works Deposits (of Rs.393.77 crores or around 70 million Euros), inflated financial achievement (of Rs.307.69 crores or 55 million Euro), excess expenditure met from ARWSP funds instead of from State Plan funds (around Rs.190 crores or 34 million Euro), materials costing purchased in excess of requirements (around Rs.70 crores or 12.5 million Euro).

The conclusions of the CAG Report of 2002 are caustic.

"Despite the added thrust given to the Programme since 1999, planning and implementation suffered due to neglect of priority areas like sustainability, community participation and O&M. Resultantly, many schemes were abandoned midway and a large number of non-functional assets and unsustainable systems/sources were created which were indicative of serious planning weaknesses. Poor funds management resulted in substantial amounts being diverted to unapproved works and also being retained in Deposit Accounts. There is a strong question mark about the possibility of the achievement of the new envisaged objective of providing potable drinking water to all villages by 2004."

2.8 Synthesis

India has substantial surface and ground water resources, which has historically allowed rural users to use private sources for drinking water supply using a variety of ingenious

techniques and community management arrangements. Government investment in water infrastructure in the last two centuries has however been required to supplement these private sources.

Although water is constitutionally designated a subject for state-level provision management, the central government has made substantial financial and infrastructural contribution to water resource development since India's political Independence in 1947, continuing a trend from British and pre-British times. Government intervention in the water sector in the last 50 years has however been fragmented, with several Ministries and Departments in central and state governments taking decisions that affect water resource development and management. External support organisations, including bilateral and multilateral donor agencies (such as the World Bank) and international NGOs (such as Oxfam and WaterAid) have also been making investments in water supply infrastructure, albeit at a much smaller scale than government. Water sector investments in states are financed largely by central and state government programmes, through centrally-sponsored schemes and state-sponsored schemes.

The official situation that 95% of nearly 1.5 million rural habitations in India have been provided with safe and adequate drinking water is impressive. This spot assessment, most recently carried out in 2003, however, masks the wide variations in water availability over time, and a substantial number of habitations have acute drinking water problems during the summer months and periods of droughts. The GOI-WB (World Bank) assessment stated clearly that the water supply situation is critical in several areas due to inadequate infrastructure to fully utilise the available stock on the one hand, and overexploitation of available stocks of surface and ground water by infrastructure on the other. The lack of integrated water management and inter-sectoral competition for scarce water resources is likely to worsen water availability in the future. Indeed, they have pointed out dangers of continuing with the current method of unsustainable water use, and the need for reform.

Worse is the legacy of failure of vast amounts of Government investment over the several decades since political independence in 1947, totalling around 6 billion Euros, to provide rural habitations with safe and potable water. Inefficient investment, misappropriation and poor fund management leading to cost escalations and projects being abandoned midway, have characterised this huge investment.

A concrete step to redress this situation, at least with respect to rural drinking water supply, were the sector reform pilot projects started by the Government of India in 1999, which were scaled up in 2002 as the Swajaldhara programme, and introduced for the first time government recognition of community management in rural water supply as the way forward.

Despite the scathing review of the government's own watchdog agency, the CAG, of a continuation of the past trend of wasteful and misdirected expenditure in the sector, it is necessary to study the process by which community management has been scaled up in

India, at least to learn lessons to improve the effectiveness of government investment in the future.

3. Community Managed Rural Water Supply Initiatives

Clearly, the most ambitious attempt by far to initiate community-managed water supply in rural India has been the sector reform pilot projects of the GOI, started in 67 districts of 26 states in April 1999. However, there have been several attempts even from the 1960s, mostly led by donor agencies and NGOs, to mobilise rural communities to manage their own water supply systems.²¹ A major thrust began in the 1990s, notably by donor-funded projects, and it is instructive to review this experience, as a backdrop to the sector reforms project.

3.1 Early Initiatives

Three piped water schemes in Uttar Pradesh were commissioned between 1965 and 1968 and handed over to communities for O&M, including the collection of finances.²² The WHO and UNICEF provided expert technical advice and equipment, the state government provided the remaining project costs, while the overall responsibility for the programme (design and organisation of community participation in administering the scheme and implementation of health education programmes) was done by the Planning Research and Action Institute (PRAI) in Lucknow. Beneficiary participation in operation and maintenance was considered central to the sustainability of the project.

The Banki Scheme (1965 – 1994)

The Banki piped water scheme covering 7 villages that formed part of the two panchayats of Sahabpur and Sursanda in Barabanki district was initiated when one of the panchayats donated land for the project site. It was commissioned in 1965, operated for six months by the Local Self Government Engineering Department of the State Government and was handed over to a Joint Action Committee (JAC) comprising elected representatives from panchayats and officials of associated government departments for coordination, operation and maintenance. The JAC drafted bye laws for the collection of water tariffs from household connections and public stand posts, and employed people to receive collections, keep records, operate the pump and to monitor and maintain the system. The number of house connections increased from 260 in 1967 to 383 in 1971, while public stand posts increased from 34 to 42. The scheme operated in profit and successfully for 8 years and 'became a highly recognised demonstration model in South Asia and attracted the attention of the global development community' (WSP, 2002). Overall, the Banki

²¹ In fact community-based development was a major plank of India's economic development policy in the 1950s and 1960s and the administrative division called the 'block' in each districts actually stands for *Community Development* Block. The community-based approach, however, gave way in the early 1970s to the 'direct attack on poverty' with the growing realisation that growth was not 'trickling down' to the community level.

²² This material is drawn from WSP (2002).

scheme lasted a total of 29 years and became defunct in 1994 due to a combination of factors such as erratic electricity supply, limitations of the capacity of the old overhead tank to supply a growing population, and non-payment of water tariffs by one group of villagers.

The Mokhampur Scheme (1962 – 1976)

Constructed and commissioned in 1966 to provide piped water supply to the single village of Mokhampur in Meerut district, it was operated for a year by the LSGED and handed over to the Gram Panchayat in 1967. Poor demand from users saw the scheme supplying water only to a pair of public stand posts as none of the residents took house connections. Only a personal commitment by the Gram Pradhan to generate house connections saw the expansion of the scheme to 20 houses. However, political leadership in the village changed in 1974, and since the new Pradhan was not interested in collecting tariffs or maintaining the project, the scheme stopped operating in 1976.

The Pharenda Scheme (1964 -)

The Pharenda Scheme covering 11 villages in Gorakhpur district of eastern Uttar Pradesh was initiated at the request of the Pharenda Block Development Office and was commissioned in 1964. After a year of operation by the LSGED, the scheme was handed over to a local committee, assisted by local government officials and chaired by the Block Pramukh. The number of private house connections increased from 279 in 1967 to 547 in 1971, and public stand posts from 123 to 125 over the same period. However, persistent yield problems from the tube well right from the start coupled by deteriorating power availability in the early 1970s led to a decrease in service levels – which, in turn, caused difficulties in collecting payments from users. In debt by the mid 1970s, the scheme was handed over to the UP Jal Nigam (the state government's water authority), which is still operating the system with 184 house connections in 2001 (when it was last visited).

Learning: Even a successful community management initiative requires a support structure to cope with external shocks and stresses. Without such support, even a seemingly successful and long-lived community management exercise can collapse.

3.2 Independent Initiatives

Kolhapur, Maharashtra (1979 -)

In 1979, a 4-village piped water scheme was constructed by a government agency (Maharashtra Jal Pradhikaran (MJP)) and handed over to an informal 4-village committee, since the Zilla Parishad refused to take the scheme over without a budget for operation and maintenance.²³ Without any further assistance from NGOs, donors or even the government, the informal (unregistered) committee ran this scheme for the next 20 years

²³ This material is from WSP (1999).

(last visited in 1999), adding more household connections, reducing public stand posts, and creating a surplus of Rs. 3 million in the committee fund.

Hingoli, Maharashtra (1997 – 2004)

In 1997 the 150 residents of Hadshi village, Hingoli district, Maharashtra, were facing extreme hardship with the women having to carry 15 to 20 buckets of water a day, with the situation worsening in the monsoons. Since hand pumps were not technically feasible due to the hard rock strata, a local NGO, Sadhana, helped villagers design and install a piped water scheme. The cost of the scheme was brought down from Rs 175,000 (Euro 3,500) to Rs 135,000 (Euro 2,750) by simplifying the sophisticated design. Sadhana obtained 60 per cent of the funding as a loan from the Rotary Club, while villagers contributed the remaining 40 percent of construction cost in cash (10 percent) and labour (30 percent), and also agreed to repay the entire loan in monthly instalments. Thus each household contributed Rs 2,000 (Euro 36) towards the capital cost, and paid Rs 100 (Euro 1.8) per month towards the repayment of the loan, to the women's Self Help Group (SHG) in the village that implements the project. In addition, the SHG collects Rs 10 (Euro 0.18) per month from each household towards salaries and other O&M expenses.

The scheme employs one person to oversee the pumping hours and repairs. This is the only recurring expenditure since the electricity for running the pump is provided free by the farmer on whose land the source and pump station are located. Only one repair job was undertaken so far in which Rs 250 (Euro 4.50) was paid out as cash by the SHG. While the payment of Rs 100 is considered high, the SHG has been able to make the required collections to pay the monthly instalments.

The scheme is operated and managed by the SHG without any government support. A distinctive feature of the scheme is that not only are the decisions with respect to O&M made by the users, but almost every decision related to the design and construction of the scheme was also made by the users. The SHG meets once a month to discuss the income and expenditure statements and make collections for repayment of the loan.

Learning: Village communities can be trained and facilitated to take on specific tasks of community management, typically, operation and maintenance and collection of charges and fines. However, even after an initial period of successful operation, independent of the facilitating organisations, they may find external factors (such as electricity supply and costs) too great a threat to sustainable operation. What may seem sustainable over an initial period of several months could still collapse in the absence of a support structure to solve problems that are bound to arise over time.

Synthesis

The key point these serve to illustrate is that community management of piped water supply is not new in India. Their success varied, however, as did public awareness of their

achievements. All four schemes profiled earlier were documented only in the period 1999 – 2002. Conceptually, all four did not involve community voices in the design or construction of the piped water supply schemes, but transferred responsibility for their operation and maintenance, both physical and financial, and expansion and tariff setting to representatives of the affected communities. Of the four, only the Kolhapur scheme can be termed a sustained success since it is still in operation and in profit.

3.3 NGO Initiatives

Several large and prominent NGOs, such as the Ramakrishna Mission Lokashiksha Parishad at Narendrapur in West Bengal (started in 1952), the Mysore Relief and Development Agency (MYRADA) in Bangalore, Karnataka (started in 1968), AFARM (Association for Agriculture and Rural Management) in Pune, Maharashtra, Utthan (started in 1981) and SEWA (started in 1972) in Gujarat, the Dhan Foundation in Tamil Nadu, and Gram Vikas in Orissa (started in 1979), have been working since the 1980s to introduce aspects of community management into rural water supply and sanitation. Typically, funds for these initiatives have been sourced by the NGO, which also provided staff to promote community participation and hands-on training for eventual management by the community. Intensive interaction by NGO staff over several years have yielded results, though few have withdrawn from these villages and returned to assess the sustainability of their initiatives. The lack of independent documentation or evaluation, and consequent dependence on NGO documentation of their ‘success stories’ makes it difficult to make accurate judgements about the sustainability of these community management initiatives, although their experiences can be used to draw valuable lessons regarding such initiatives. A few of these are profiled below.

1. *Utthan, Gujarat (1981 -)*

Utthan was set up in 1981 and began work in the Bhal region in Gujarat, which has a hostile geo-climatic environment, highly saline shallow ground water, erratic monsoon rains, exploitation of the poor by high castes and out-migration. Utthan helped create a community-based group called Mahiti, and through a highly facilitative community mobilisation and organisational work, Utthan and Mahiti were able to initiate a women’s movement in Bhal focused around the issue of access to safe and regular supply of drinking water. This movement graduated over time to create powerful pressure on the local and state level bureaucracy. In the early 1980s, when providing drinking water to far-flung settlements through pipelines was accepted as the only public distribution system all over the country, the women in Bhal pressurised the Gujarat Water Supply

Box 2.4: Utthan, the origins:

After graduating in nutrition in 1979 Nafisaben Barot worked in a voluntary organisation at a village called Dholka in Gujarat for about a year, founded Utthan in 1981 and started work in the Bhal region of Gujarat the same year. Since 1994, Utthan is working in various regions of Gujarat, including the hilly and tribal Panchmahal district, Bhavnagar in inland Saurashtra, and the coastal Amareli area.

and Sewerage Board to approve a project that promoted decentralised rain water harvesting structures such as plastic lined ponds and roof water collection tanks.

Utthan withdrew from Bhal in 1994, after having helped Mahiti to build its organisational capability to continue with the development efforts in the region.

Box 2.5: Utthan: Positive Impacts: Such intense community organisational processes inspired two small but noteworthy successes for the women of Bhal.

(1) Protest against usurious money lenders: Women mobilized a social protest against an exploitative indigenous money lending system run by Darbars - the most powerful caste in the area. The protest caused the collapse of the usurious money lending system of the Darbars, and gave the women an opportunity to organise themselves into vibrant community groups and undertake their own savings, credit, and income generating activities.

(2) Action against water theft: For many years, villagers of Raisangadh managed a natural pond for domestic water and the plastic lined pond for drinking water constructed with the help of Utthan-Mahiti. The neighbouring village of Cher, comprising solely of Darbars, had not been part of the development processes initiated by Utthan-Mahiti in the area, but when their drinking water sources dried up, they approached Raisangadh for help. Raisangadh villagers agreed to let them draw water from the natural pond, and transport it to Cher by bullock carts (fitted with wooden barrels). However, some Darbars from Cher village wielded their political clout with the local administration and got an official letter authorising them to take water from the plastic lined pond. They then connected a diesel pump to an old broken pipeline to their village, and began to take this water. Seeing this, a group of about 80 women belonging to the savings and credit groups of the Raisangadh organised themselves and stormed the office of the block administrator. They "forced" him to issue another letter ordering the Cher villagers to stop drawing water and to remove the pump immediately. Cher had to comply and withdrew.

Learning: Women's groups can spearhead community managed water supply programmes, and can be empowered to take pro-active steps to protect their own interests. Local government administrations can be made to take note of dynamic initiatives and to afford them decision-making space. If set up correctly, with a lot of initial

capacity building and empowerment efforts, these groups can begin functioning independent of the NGO

2. *Gram Vikas, Orissa (1992 -)*

Gram Vikas, an NGO working in rural Orissa since 1979 (see Box 2.5), began the Rural Health and Environment Programme (RHEP) with the primary purpose of improving the health of rural communities.²⁴ Key components of the Rural Health and Environment Programme of Gram Vikas are construction of toilets and bathing rooms, supply of protected piped drinking water to all families in the village and creation of a village corpus fund for system extension. In

the 105 villages (over 8,000 families) covered so far, the communities use and maintain the infrastructure created.

All households make a one-time contribution of Rs 1,000 (Euro 18) on an average to a corpus fund at the start of the programme, used to extend facilities to new families. The NGO contributes part of the capital cost, while villagers raise the rest, including a small mandatory cash contribution. The villagers also contribute local materials and unskilled labour for the actual construction. A maintenance fund is collected regularly to meet recurring expenses of electricity bills, repairs, etc.

The RHEP was so successful that it soon became much more than a health and sanitation programme - it became an entire model of development. The confidence and community spirit that accompanied their success in the health and sanitation programme triggered aspirations for further change in the villages: the people began to engage in all sorts of development activities in the villages, including housing, community infrastructure, education, livelihood programmes and women's empowerment. After three years in each village, Gram Vikas moves on, and the villagers continue their collective efforts to make their village a better place to live in.

Learning: Gram Vikas feel that their experience has taught them that interventions will be successful only if all households in the village participate. Also, convincing villages to undertake such community management work takes time and constant effort. Initially starting up the RHEP took as much as 2 years in some cases, and required constant

Box 2.6: Gram Vikas: The Origins:

Started in 1979 by former student activist and President of the Young Students Movement for Development (YSMD), Joe Madiath, the NGO Gramin Vikas began work with the tribals of Orissa. Following the establishment of a biogas programme (1983-1993), a social forestry programme (since 1985), a habitat programme (since 1985) and a programme to establish residential schools for adivasi (tribal) children (since 1982), Gram Vikas began its Rural Health and Environment Programme (RHEP). Gram Vikas directly reaches out to 20,000 households in 500 villages in 13 districts of rural Orissa, 80% of whom are adivasis (tribals). Starting in the early 1990s, it took four years to initiate the RHEP in the first five villages covering 500 families where Gram Vikas had worked on the Biogas projects, the RHEP currently covers around 5,000 families in 67 villages in 12 districts of rural Orissa.

²⁴ Material from the website www.gramvikas.org has been used here.

interaction by NGO staff with village women and men, individually and collectively. Today, however, other villages are collecting the corpus required to introduce RHEP and approaching Gram Vikas to implement the RHEP in their villages.

External factors can lead to greater support. A preliminary GV survey shows that the programme is gaining momentum due to several factors including the 'neighbour effect' (villages adjacent to RHEP villages want to start development of their villages), inter-village marriages (more and more families want to marry their daughters into villages with drinking water and toilet facilities) and political demand (Box 2.7).

Box 2.7: Political demand for Gram Vikas programmes:

In Angarpada, the panchayat made a contribution to the corpus fund, to facilitate the initiation of the programme. In five villages, funds from MLAs and MPs have been accessed as partial contribution. One MLA said that since the programme has proved a success, his contribution would ensure that he 'shared the glory'.
(www.gramvikas.org)

3. SEWA, Gujarat (1994 -)

SEWA launched its water campaign in 1994 and has developed an integrated approach of women, water and work in the arid districts of Banaskantha and Surendranagar, where drought-prone rainfed agriculture is the major means of livelihood. SEWA formed self-help groups (SHGs) and village water committees and in 1998, began roof rainwater harvesting and revival of traditional water bodies, under the leadership of women. By 2001, 62 villages and 30,000 women were involved in the water campaign in the region, constructing 500 roof top rainwater-harvesting water tanks in 250 villages to store rainwater, and maintaining and managing 1443 different water sources through water committees (SEWA, Annual Report, 2001).

Using funds available through the national watershed development programme, 15 farm ponds have been constructed, recharging of around 120 tube wells, around 20 village ponds have been repaired, and 3 check dams and 15 open wells have been recharged. As a result about 2500 hectare of land now has an irrigation facility, where previously agriculture was only rainfed (SEWA, Women Lead, Watershed Development in Desert Areas, p.1).

Box 2.8: SEWA, the origins

The Self Employed Women's Association (SEWA) was established as a trade union in 1972 in Ahmedabad, Gujarat by Ilaben Bhat. It is currently the largest union in the state and now has a membership of 200,000 poor women in the informal sector economy.

Village women in 11 villages of Sabarkantha district have had hand pump repair training and have subsequently taken full responsibility for repair. The Gujarat Water Supply and Sewerage Board invited women to take up the responsibility of hand pump repairing in an entire taluka of the district. Village women have thus become "barefoot technicians" under this campaign. In 8 villages of Banaskantha district, women have formed their own water committees. Through these they undertake contour binding, building checkdams, village ponds repair and other water conservation related construction. SEWA helped the local women's association (Banaskantha DWCRMA Mahila SEWA Association) develop plastic-lined ponds for water conservation. Technical support and training was provided by an NGO called the Foundation for Public Interest (FPI). Now local women manage their own village ponds, including all bookkeeping and accounts. Village women have pressed their

case for involvement, participation and representation in all water-related boards and committees, and have been selected to run the local water supply in Surendranagar district (www.sewa.org).

SEWA's water campaign has led to eco-regeneration and reducing migration from the region, besides providing women with the managerial and administrative skills necessary to become owners and managers of their own programme. It has also led to regional development, as there is an integrated development of land, water resources, forestry and agriculture (SEWA, Women Lead, Watershed Development in Desert Areas, p.1).

Learning: Women's self help groups take a lead in organising water management, since they are directly affected. They, however, require skills and experience to undertake this successfully, which in turn requires an initial period of capacity building and backstopping. Once they are trained and experienced in different aspects of community management, including hand pump repair, accountancy and book keeping, they are empowered enough to function on their own. They also then acquire the confidence to function in government decision-making committees, but this may not happen without the NGO pressing for such institutional space.

4. Watershed Organisation Trust, Maharashtra (1996 -)

In 1996, WOTR began work in the rain shadow region of Maharashtra depleted of natural resources necessary for rural livelihood (see Box 2.9). They helped set up the Darewadi Village Water Committee, a registered NGO, to facilitate implementation of watershed development programmes in Darewadi and neighbouring villages, where agriculture produced sustenance for only 3-4 months, labour opportunities were scarce, drinking water was a problem especially in summer, sheep grazing further depleted the fragile economy and hence villagers had to migrate seasonally to cut sugarcane or labour in brick kilns for contractors.

Over time they set up 11 women's Self Help Groups (SHGs) in Darewadi along with an Apex Body of these SHGs, the Samyukta Mahila Samitee . Women

became active co-partners and contributors in the management of their watershed and the integrated development of their village, and have undertaken a number of activities for drudgery reduction and enhancement of the quality of their lives, such as soak pits, kitchen gardens, using cleaner cooking fuels, water supply system, toilet construction, etc. A number of income generating activities like dairy, nursery, fishery, etc. have also been undertaken. Most important of all, they manage their savings and credit groups with

Box 2.9: WOTR, The Origins:

The Watershed Organisation Trust (WOTR) was established in December 1993, by a Jesuit priest, Fr. Hermann Bacheras, as a support organisation for Village Self Help Groups (VSHGs) and NGOs implementing watershed development projects. With assistance from the Indo-German Watershed Development Programme (IGWDP), it assists people living in rural areas alleviate their poverty through participatory natural resource management on a watershed basis.

internal lending, which provides immediate loans for their basic needs. Through micro-finance support provided by WOTR, the women's group also started a dairy.

The WOTR programme norms specified that 50% of the community contribution (mandatory under the national watershed development programme) should be set aside in a Maintenance Fund (MF), to undertake repairs in the drainage line structures and the treatments in common property resources such as forest and community land.. Today Darewadi has nearly Rs. 750,000 (approx Euro 13,400), including Rs. 90,000 (Euro 1,600) awarded for successful completion of the watershed programme. Each family paid Rs. 100 (Euro 1.8) to the MF, which also collects penalties charged to individuals for violating programme norms.

Besides the impact of the watershed development work, which includes an increase in local employment leading to a decline in migration, increased water levels in wells and better agricultural yields, the project fostered greater unity amongst the people and increased their exposure to the outside world.

Learning: WOTR believes that trust in NGO staff is fundamental and improper expectations should be rectified at the beginning of the programme itself. The quality and subsequent visible success of the watershed work are very essential (i.e., "seeing is believing"). The culture of the people as well as their traditions should not be taken for granted and should be handled sensitively. The programme demand big changes in the established traditions of village life and calls for much patience on the part of the NGO. Direct exchange between the people of the watershed and those from other places helps create awareness, brings about a change in attitude and a sense of unity. The facilitating agency should be clear about the non-negotiable principles and try to achieve these through participatory methods.

5. BAIF Development Research Foundation, Maharashtra, Karnataka, UP (1996 -)

In 1996, BAIF began work in a few villages in three states, Karnataka (Hassan district), Rajasthan (Bundi district) and Uttar Pradesh (Kanpur Dehat district). All these villages were dependent on dug-wells and hand pumps for drinking and domestic needs, minor productive uses and livestock, and there were severe shortages during summer, during which women had to walk long distances to fetch additional water.

Box 2.10: BAIF, the origins:

The Bharatiya Agro Industries Foundation (BAIF) was founded in 1967 by Manibhai Desai in Urulikanchan, a backward village near Pune, and was later renamed as BAIF Development Research Foundation, to replicate this novel programme in rural development. Presently, the organisation is professionally managed by a team of multidisciplinary experts, under the guidance of the Board of Trustees. BAIF's watershed development programme has also being implemented on 34,510 ha in Jhabua, Rajgarh, Vidisha and Guna districts through 51 micro watersheds in 7 milli watersheds. It also aims at sustainable management of natural resources for improved quality of life, which covers 2100 families from 5 villages each in Rajasthan, Karnataka and Uttar Pradesh states spread over 3400 ha that has led to the development of safe drinking water sources with easy access.

In these villages, BAIF helped initiate a range of activities including systems of farm-ponds (dug in a corner of farmers' fields), revival of defunct piped water schemes, drilling new bore wells for new piped water schemes, support for kitchen gardens and composting, all with community participation. Supply sources were created with community contribution and active participation, while maintenance is entirely by villagers.

This integrated development programme led to increases in the area under irrigation, improved groundwater recharge and sufficient drinking water even in summer. The community maintains all drinking water sources in good condition and chlorinates them regularly. Kitchen gardens have been started or revived, awareness has been created among villagers regarding cleanliness and hygiene, composting and recycling organic waste into manure has begun, and community biogas units (using cow dung to produce electricity) have been installed, roads have been paved. Access to improved water sources has also reduced the incidence of water borne diseases.

Learning: The extensive rapport building and messaging by NGO staff has helped community understand the importance of personal health and hygiene, in the overall context of water supply and sanitation. The general improvement of livelihoods through improvements in irrigation, and the visible successes of the project, has not only improved the overall impact of water supply and sanitation but also a sustained community in maintaining these assets.

6. Social Economic Unit Foundation (SEUF), Kerala (1990 -)

SEUF has been instrumental in creating community participation in Dutch-Danish assisted water supply programmes in 73 Gram Panchayats in Kerala, a scheme implemented by the Kerala Water Authority, and providing safe drinking water supply to more than 4,000 households and 700 institutions such as schools and Gram Panchayats. SEUF organised the communities and facilitated site selection, formed the Stand post Attendants' groups for protection of stand posts and careful use of drinking water, and a leak reporting system was developed to obtain quick feedback on pipeline damage.

Synthesis

There are several other NGOs, in addition to these 6 organisations profiled above, that have been working with community managed approaches in the water sector, including the Dhan Foundation in Tamil Nadu, the Ramakrishna Mission Lok Shiksha Parishad in West Bengal, MYRADA and Outreach in Karnataka, AFARM in Maharashtra and international NGOs including ActionAid, WaterAid and CARE. Yet, these are only a few examples from the experiences of several large and small NGO initiatives from the 26 states all over the country, varying in scope and success in implementing community managed water supply and sanitation initiatives since the 1980s.

The key points to note are these experiences (1) are typically small-scale effort-intensive trial and error-based experimental approaches, (2) contain some of the few examples of true community management and (3) these were available *prior* to the start of the SRPP in 1999.

3.4 Donor-NGO Initiatives

The International Decade of Water and Sanitation (1980 – 1990), and international conferences in Rio and Dublin, renewed interest by donor agencies in demand-responsive and community managed water supply systems, even in India. Since the early 1990s, a spate of water supply and environmental sanitation projects were designed and implemented by bilateral donors including the Netherlands, Denmark, Great Britain, Germany and Sweden, and multilateral donors especially the World Bank, UNICEF and the Water & Sanitation Program - South Asia (WSP-SA), head-quartered in Delhi. Three of these are detailed below, for the learning they gleaned, prior to the Sector Reform Pilot Project.

1. *KfW, Aapni Yojna Project, Rajasthan ((1994 – 2004)*

With the financial assistance of the German Development Bank (KfW) the Government of Rajasthan launched the “Integrated Water Supply, Sanitation and Health Education Programme (locally called *Aapni Yojna* or ‘Our project’) to provide safe drinking water for about 900,000 inhabitants of 370 villages and two towns in three desert districts of Rajasthan, Churu, Hanumangarh and Jhunjhunu. The harsh living conditions and scarcity of water here forced a major portion of the population to become dependent on irregular rainwater and ground water, which is saline and contaminated by high levels of fluoride. Earlier water supply schemes were available to a limited number of villages and mostly failed to achieve their targets and to fulfil people’s needs. Working with the government, the project set up a Project Management Cell (PMC) within the state government’s Public Health Engineering Department (PHED) to deal with technical issues, while a Community Participation Unit was set up by a consortium of NGOs.

Community participation involves the formation of a village level Water and Health Committee (WHC), on the basis of a contract with the PMC and PHED, and involved in the selection of the sites of public stand posts and cattle water troughs. It arranges voluntary labour for trench evacuation inside the village and coordinates all village-level installations, to build ownership of the scheme. The PMC attends to technical problems in the village. Water meters have been provided for each village and the water consumed in a month is billed to the village WHC. WHC collects the money from the village and deposits it with the PMC. A special tariff structure has been sanctioned by the Government of Rajasthan for the *Aapni Yojna*.

Using a highly participatory process, the project formed Water and Health Committees in 363 villages, Women’s Groups in 311 villages and SHGs in 223 villages. The village

communities (especially women) actively participated in planning (including site selection) and constructing WatSan infrastructure (including 15, 000 household sanitation facilities) and are maintaining them in regular use. Villagers have contributed around Rs. 25 million as user charges and there is no default. Water meters have been provided even on public stand posts and around 30% of the total O&M cost is being recovered. Such cost recovery has led to the economic use of water and protection of the wastage. Further, school sanitation programmes have started in all villages, focusing on children as agents of change, with school committees to regularly follow up on the progress of school sanitation programme.

Learning: This project has effectively scaled up the kind of NGO activity described earlier, and in fact, a key learning reported is that ‘involvement of NGOs is a must’ for fostering a sense of ownership, and hence effective community participation and management (KfW, 2004). Huge capacity building efforts are required in addition to regular and strategic intervention by project field staff. Government and NGOs need to share information regularly and create a conducive environment for project implementation. With active support from the state government, and catalyzed by donor and NGO activity, community management can be initiated for operation and maintenance and cost recovery. Even with extensive community participation, ownership and support for the initiative – including no payment defaults – collections do not cover all O&M costs.

2. The World Bank, Maharashtra and Karnataka (1991 – 2000)

Two integrated rural water supply and environmental sanitation projects were formulated and implemented with World Bank assistance during the early 1990s:

- Maharashtra Rural Water Supply and Environmental Sanitation Project (1991 – 1999) covering 564 villages in 10 districts.
- Karnataka Integrated Rural Water Supply and Environmental Sanitation Project (1993 – 2000) covering 1,111 villages in 12 districts.

Both projects had a common goal: to raise living standards through improved health and productivity, by expanding access to potable rural water supply systems and environmental sanitation (WSP, 2000). Two novel features of these projects, at that time, were the integration of water supply, sanitation and hygiene promotion in a single project, and the use of participatory approaches in implementation.

The projects provided WatSan infrastructure and health and hygiene promotion messages, though the focus tended to be more on construction of facilities. NGOs were contracted to foster community participation and involvement. Yet, NGOs ran into conflicts with local government officials, whom they saw as ‘top-down’ prescriptive managers who did not believe in community participation, and project level intervention was required to reach a workable relationship.

Several innovative approaches were developed, including a multi-channel message-based Information, Education and Communication (IEC) approach, combining local folk media as

well as mass media, group work, house visits, and regular group and inter-personal contact. However, messaging on the proper use of facilities started after the water supply situation improved.

The Maharashtra project found that, although community contributions were sufficient to cover O&M costs, removing the power subsidy provided by the government would have caused a financial loss to the VWSC, and would have required a further 9% increase in water rates (raised twice already). Further, while the scheme is self-sufficient with respect to the current O&M, it is encountering problems in extending services to more distant pockets of population, in replacement of the pumps, and in raising service levels to match population and income growth.

Learning: A review of these projects (WSP, 2000) found that increased use of participatory methods and tools, facilitated stakeholder analysis at the design stage – to facilitate community participation and management – and for monitoring and evaluation, and a gender-sensitive project design, are essential for success. Further, well-timed training at local levels with incentives to support such capacity building are also required.

3. *The World Bank, Swajal Project (1996 – 2002)*

The Uttar Pradesh Rural Water Supply and Sanitation Project (1996 – 2002) was formulated in 1996, covering 1200 villages in 19 districts in the Hill and Bundelkhand regions of Uttar Pradesh (WSP, 2001). Known locally as the Swajal Project, it had two programme goals:

- Deliver sustainable health and hygiene benefits to the rural population through improvements in water supply and environmental sanitation services, which will increase rural incomes through time savings and income opportunities for women.
- Promote the long-term sustainability of the RWSS sector in UP by identifying and implementing an appropriate policy framework and strategic plan.

The Swajal Project aimed to implement two major policy reforms:

- Partial capital cost recovery and full O&M cost recovery from user communities.
- An alternative service delivery mechanism for rural water supply and sanitation.

A new institutional model, comprising a partnership between three organisations, village communities (represented by their VWSCs), NGOs and Project Management Unit (PMU: an autonomous registered society at the state level), was specially designed to implement this community-based demand-responsive approach. Unlike the two older projects profiled above, where the community was not responsible for design or construction, the Swajal Project in UP made the community responsible for design, procurement and construction as well.

All funds for construction are transferred by the PMU to bank accounts managed by the village community, jointly with a support organisation (usually an NGO). Also, under a

Tripartite Agreement between the VWSC, Support organisation and the PMU, the Swajal project legally empowers VWSCs to manage these funds, and use them to procure goods, works and services for the water supply and sanitation project. Most villages procured stone and sand locally, cement and steel from the local market or district headquarters, and pipes from large suppliers (on average 200km away), using quotations from 3 suppliers in a competitive bid. Contracting for skilled services (e.g., community technicians to build gravity systems, fitters, plumbers and masons) is mainly at local level, though for more sophisticated services (e.g., construction of overhead tanks and drilling deep bore tubewells), skills are not usually available locally and so are contracted out by the VWSC and the support NGO.

These resulted in a faster process of contracting, compared to government procedures, lower processing cost of procurement and better quality of materials and services procured, compared to government services. However, the entire process of community contracting is supported by the PMU which:

- Planned all project activities, including phasing of villages, for smooth operation of the project as a whole.
- Screened and hired NGOs to work with communities
- Prepared tripartite agreements legally empowering VWSCs to manage all project construction funds
- Collected MIS information and information on prices on market rates of materials and services, and fed these back to the VWSCs.
- Worked out 'innovative, efficient and cost-effective practices' to be followed by VWSCs.
- Evolved standards to ensure quality in the community contracting process.

Learning: A key lesson was that while village communities can be assisted successfully to independently undertake community contracting, they require substantial capacity building and support to reach that stage. But the key learning is that unless the state government agrees to the principle of users managing construction funds and change its procurement rules accordingly, it will be difficult to replicate this system in the state government's ongoing system of service delivery. This is the major change brought about through the Sector Reform Pilots Project in 1999.

Synthesis

India has a rich history of innovative initiatives in fostering community management in the rural water supply and sanitation sector, although these can be divided broadly into the pre- 1990 and post 1990 period. The early experience, especially of NGOs in different parts of the country, typically tended to be small-scale and experimental with little replication outside the project areas or the areas of NGO operation. Even cases of community management initiated by rural communities themselves have tended to be outside the formal government institutional structure of rural water supply provision. This

experience had three significant differences with the donor-assisted initiatives that started in the early 1990s.

- Scale – while NGO initiatives typically started small (even though the larger ones grew substantially over time), the donor-assisted projects started simultaneously with larger outlays (US\$ 60 – 100 million), a much larger number of villages (500 – 1000) and a consortium of NGOs to implement them.
- Involvement with government – while NGO initiatives by and large did not involve the government in any significant way, but continued as a parallel activity, the donor-assisted projects explicitly set out to do so, and some even had government staff seconded to the project.²⁵
- Time frames of operation – While most NGOs have spent considerable time in their target villages and only few of these NGOs have ‘moved on’ from their original areas of operation, project staff (including implementing NGOs) in donor-assisted projects worked with a definite phased plan of village work, entailing time tables for various activities and for withdrawal.

Although there have hardly been any objective analyses of impact (most of the information available is based on current self-reporting), both sets of experiences had several common lessons for future development in the sector:

- **Community management is possible** - Communities can be facilitated and trained to take on all aspects of water supply and sanitation provision, from design, planning site selection to cost recovery, financial management and extension.
- **Intensive community contact** – Substantial amounts of time and effort need to be invested in mobilizing communities, creating awareness, building capacity and providing backstopping and trouble-shooting support to nascent village organisations. This includes effort to dispel unreal expectations, misinformation and local prejudice and to establish ‘non-negotiable’ principles (e.g., social and gender equity).
- **Investment in institution building** – Although SHGs, VWSCs and inter-village committees can successfully manage various aspects of community management, such as O&M and finances, considerable investments of time and effort are required to develop operational, managerial and financial skills – to the level that they can function independently and sustainably.
- **Involving the entire village community** - Interventions will be successful only if all households in the village participate, irrespective of political, caste gender and economic divisions.

²⁵ However, all of these worked through a separate entity called the Project Management Unit (PMU) or the Project Support Unit (PSU), located in the state capital, but working independently of the state government.

- **Working with government** – To take initiatives to scale requires working with the government.
- **External factors are important** – Support from local politicians and institutions are vital for continued success and extension of activities. In the absence of managerial abilities to deal with the external environment, external factors (e.g., policy changes, power supply) can cause even successfully initiated community management to collapse.
- **Integrated rural livelihoods approaches** – Integrating domestic water supply with sanitation, health and hygiene promotion, and all these with general livelihood improvement measures, such as watershed development projects, kitchen gardens, livestock, social forestry, and waste recycling improves the overall impact of water supply and sanitation and helps to sustain successful community management. Or, to put it differently, water supply and sanitation need to be seen as a component of a larger agenda of rural change, whether the point of entry is from rural, health, savings and credit, or watershed development.

Of critical importance, however, is the point noted in the context of the Swajal project that unless the state government agrees to the principle of community management of government funds for water supply and sanitation, it would be difficult to replicate the successful experiments of all NGO and donor-assisted projects in the much larger government system of water supply service delivery. This then is the real significance of the sector reform pilot project: for the first time in the history of rural water supply provision in India, the government was explicitly recognising the legitimacy of community management.

4. The Sector Reform Pilot Projects

4.1 Government Initiatives in Water Sector Reform

The Government of India (represented by officials of the Rajiv Gandhi National Drinking Water Mission, the Planning Commission, and the Ministry of Rural Development) and state government officials from six states, and consultants from the World Bank and other donor organisations published a comprehensive 5-volume World Bank review of water resources management in India. This joint assessment by the World Bank and the Government of India (WB, 1999b), concluded that 'India faces an increasingly urgent situation; its finite and fragile water resources are stressed and depleting while different sectoral demands are growing rapidly'.²⁶ It also noted two major challenges in India's water sector:

- **Finding solutions for competing inter-sectoral demands** – as irrigation, domestic and industrial needs expand; and
- **Allocating, planning and managing water on a river basin basis** – including those water resources shared by two or more states

The same joint assessment notes that the policy framework for water resources in the country emphasises the development of water resources – as opposed to its management – and the construction of new infrastructure, within a top-down, supply-oriented and fragmentary management framework. With the current institutional set up at the national and state governments, the planning and implementation has been separate for surface water projects, groundwater programmes and various water-using sectors.

While noting that this approach has resulted in major economic, social and environmental costs, and that the existing institutional arrangements do not facilitate comprehensive water allocation, planning and management, the joint assessment states that 'fundamental reforms are needed now in India in how water is captured allocated between sectors, delivered to users and managed'. A comprehensive approach is needed, emphasising four over-arching factors:²⁷

- **A shift from supply-driven to demand oriented approaches:**
- **Division of sectoral responsibilities between the government and non-government stakeholders**, recognising that water is an economic good with both public and private good characteristics.

²⁶ World Bank, 1999b, p. xvii.

²⁷ WB, 1999c, p. xvi.

- **Decentralising decision-making** and explicitly including non-government stakeholders in service delivery, while re-orienting the role of government from being provider and financier of services to being facilitator and enabler.
- **Achieving financial viability of service delivery**, which will make the sector sustainable and make further development possible with private sector funding for investment activities.

Four pre-requisites for this approach are:

- o Improving the policy, legislative and regulatory framework including preparing and adoption supporting policy and action documents, creation of new water allocation and sharing institutions and arrangements, better regulation and enforcement of legislation, new water tariffs, etc.
- o Strengthening institutional arrangements for resource allocation and management (with greater non-governmental stakeholder participation, better state level facilitation, grass roots mechanisms for water management, inter-river basin organisations and better coordination between central institutions) and water service delivery (with community participation, a demand-driven approach, full cost recovery, supporting public sector reforms, institutional strengthening measures, etc.)
- o Rationalizing the economic and financial incentive framework with measures to strengthen the intra-sectoral incentive framework (e.g., meaningful water prices, specific targeted measures to protect the poor, better economic and financial capabilities, higher agricultural power tariffs, rational agricultural prices, pollution taxes, access to private funding sources, etc.), measures to strengthen inter-sectoral incentive framework (including economically-based water reallocation systems) and measures to strengthen inter-state incentive frameworks.
- o Strengthening data, technological and information systems through public awareness campaigns, better data collection and monitoring, and access to technologies for efficient water use and allocation.

The joint assessment volume on Rural Water Supply and Sanitation has a chapter on 'Strategy for Sector Reform', containing a strategy for promoting rural water supply and sanitation, details the vision and approach on which the sector reform project is based. This recommended strategy had three 'service management goals' and one 'resource management' goal:

- To establish an **enabling environment**, meaning a situation that politically, legally and institutionally supports reform of the sector
- To ensure **institutional sustainability** by supporting the process of decentralization and devolution of responsibilities for RWSS to the Panchayati Raj Institutions, local

administrations and users, and by strengthening the advisory capacity of existing sector agencies

- To ensure **financial viability and sustainability** by implementing cost-sharing and cost recovery policies and
- To **protect water resources**, in particular groundwater, by developing planning, resource management and technological practices to protect or improve the availability and quality of groundwater for rural water supply.

However, as Joshi (2004) points out the very concept of sustainability was overtly economic. Also the ground realities of fostering community management, and the planning, preparation, and support – even based on past experience – is not sufficiently reflected in this formulation.

The sector reform pilot projects of 1999 are a major step in this direction, although the vision for reform in the water sector outlined in the joint WB-GOI assessment is clearly broader.

4.2 The Sector Reform Pilot Projects

Approach and strategy

In April 1999, the GOI decided to move from a target based and supply-driven approach that paid little attention to the actual practices and preferences of end users, to a demand-based approach where users get the service they want and are willing to pay for, in a new initiative called Sector Reform Pilot Projects (SRPP). Apart from demand-responsiveness, this approach stressed financial viability and sustainability of the schemes, through full cost recovery of operation and maintenance and replacement costs (see Box 4.1). These sector reforms were to be implemented on a pilot scale in selected villages in 67 districts spread over 26 states in the country, which probably represents the world's largest (central) government supported yet demand-based rural drinking water programme. The Water and Sanitation Program – South Asia (WSP-SA) and UNICEF provided institutional support to the RGNDWM for the Sector Reform Pilot Projects. They also provided implementation support to selected states, and WSP-SA took on responsibility for Andhra Pradesh, Kerala and Maharashtra.

Box 4.1: The strategy of sector reforms:

People will be willing to maintain and operate water supply schemes only if they:

- o Owned the assets
- o Had installed the hand pump themselves, or had been actively involved throughout
- o Had been trained to do simple repairs
- o Know the government will not maintain the asset
- o Had sufficient funds for maintenance and
- o Had to pay for operation and maintenance of the system.

Each state government implementing the SRP has to prepare proposals for pilot projects that incorporated the following characteristics:

A demand driven-approach, based on the empowerment of villagers to ensure their full participation in the project through a decision-making role in the choice of scheme design and management arrangements

- A focus on village level capacity building through the establishment of Village Water and Sanitation Committees
- An integrated service delivery mechanism by streamlining the functions of the agencies involved in project implementation
- Cost sharing by users contributing, in labour, land, material or cash, at least 10% of capital cost and 100% of O&M cost
- Conservation measures for sustained supply of water through rainwater harvesting and groundwater recharge structures

This was contained in the *Guidelines for Implementation of Rural Water Supply* issued by the RGNDWM in 1999, which also specified that the districts selected had to be 'progressive' in terms of water supply coverage, which meant that better performing districts were automatically chosen by their respective state governments. State governments sent in SRPP proposals to the RGNDWM, which confirmed the selection of SRPP in these districts through a letter issued by the Secretary, RGNDWM.

Institutional Structure

New institutions at the national, state and district levels were created to support the implementation of the sector reform pilot projects, which were to be carried out under the overall supervision of the Rajiv Gandhi National Drinking Water Mission (see Figure 4.1).

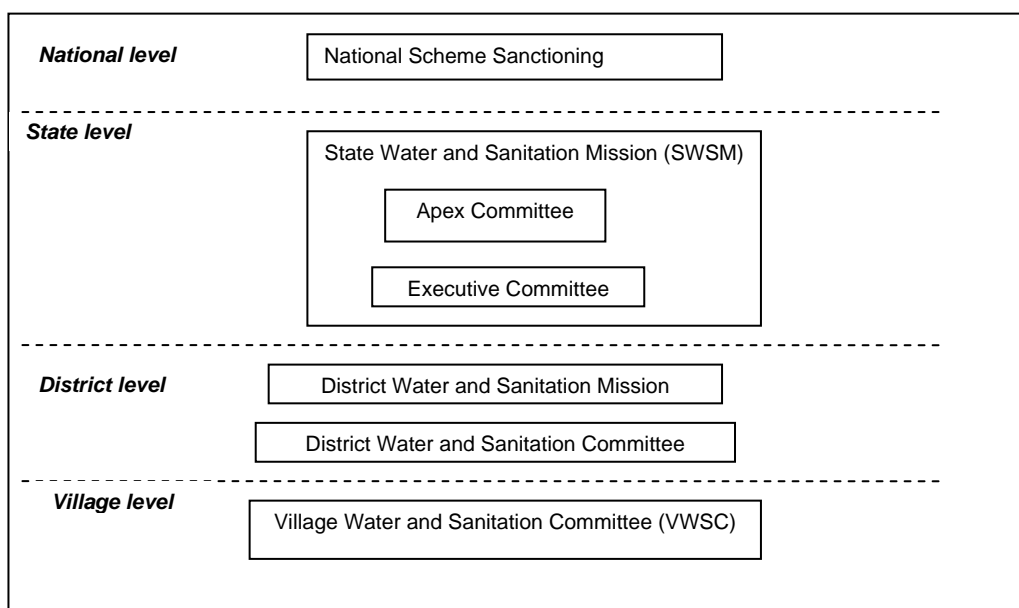


Figure 4.1: New Institutional Structure for the Sector Reform Pilot Projects

National level

A National Scheme Sanctioning Committee (NSSC), consisting of experts drawn from the sector and field, has been set up to appraise each project proposal submitted by state governments and approve it for implementation. The NSSC conducts a 6 monthly visit to check if implementation is in accordance with guidelines, and recommend further action including release of funds.

State level

The State government and its lead sector institutions – the Public Health Engineering Department and the Rural Water Supply Department – coordinate the project, albeit as facilitators rather than implementers. A new institution called the State Water and Sanitation Mission (SWSM) has been set up as a first step towards the setting up of a single department in each State and Union Territory of the country to look after both water and sanitation. This Mission was also to provide the desired ‘thrust’ for community management of water supply and sanitation.

The SWSM has an Apex Committee, chaired by the Chief Secretary of the state – one of the senior-most bureaucrats in the state government – and comprising the Secretaries of several major state government departments (Public Health Engineering, Rural Development, Panchayati Raj, Health, Education and Information & Public Relations). The Apex Committee constitutes an Executive Committee of about 15 people (see Box 4.2). In addition, State government HRD, IEC and MIS cells work with the SWSM.

Box 4.2: State Water and Sanitation Mission consists of an Apex Committee which constitutes an Executive Committee, consisting of:

- o Joint Secretary (or higher official), Public Health Engineering or Rural Water Supply – *executive officer*
- o Officials from the departments of Panchayati Raj, Health, Education, Social Welfare, Information & Public Relations,
- o Experts in IEC, HRD, MIS, Media
- o NGOs

District level

Another new institution called the District Water and Sanitation Mission (DWSM) was set up (also called PRAKALP) as a registered society, to which the GOI directly releases funds, on the recommendation of the NSSC evaluation mission. The DWSM works under the supervision, control and guidance of the Zilla Parishad (ZP) and the Chairman of the ZP is the Head of the DWSM, with the CEO of the ZP as the member secretary (see Box 4.3). Local politicians and district officials are also members of the DWSM.

Box 4.3: District Water and Sanitation Mission Governing Body consists of

- o Head: The Chairman of the ZP (or the District Planning Committee) or the District Collector/Deputy Commissioner
- o Member Secretary Chief Executive Officer ZP
- o Members of Parliament (MPs) from the district
- o Members of the state Legislative Assembly (MLAs) from the district
- o District Officers of Education, Health, Panchayati Raj, Social Welfare, Public Health Engineering, Information & Public Relations, ICDS, etc.

A District Water and Sanitation Committee has been set up, under the chairmanship of the Chief Executive Officer of the Zilla Parishad or the District Collector, to carry out the actual implementation of the project, and to ensure that community participation is institutionalised in rural water supply programmes at the district level (see Box 4.4). The Executive Engineer (PHED or ZP) is Member Secretary of the DWSC and also the Drawing and Disbursing Officer, to provide infrastructure and administrative support for the day-to-day functioning of the DWSC from existing resources.

Box 4.4: District Water and Sanitation Committee comprises the following:

- o Chairperson: District Collector or Chief Executive Officer of the Zilla Parishad
- o Member Secretary and Drawing & Disbursing Officer: Executive Engineer (Public Health Engineering Department or Zilla Parishad)
- o District Education Officer
- o District Health Officer (Civil Surgeon)
- o Project Director, District Rural Development Agency (DRDA)
- o District Panchayati Raj Officer
- o District Social Welfare Officer
- o Community Development Project Officers (CPDOs) of the ICDS
- o District Information & Public Relations Officer
- o NGOs (not exceeding 3)

The DWSC includes 3 NGO members, identified by the DWSC and co-opted into the Committee as members with prior approval from the Government of India. They would be responsible for institutionalising community participation in the water supply and sanitation programmes in the villages, through a network of volunteers or motivators. In the absence of 'good and active' NGOs in a district, the DWSC is to identify 'appropriate alternative mechanisms' including organisations such as Youth Clubs, Nehru Yuvak Kendras, Bharat Scouts and Guides, etc'.

Village level

The village water and sanitation committee (VWSC) is the village level body responsible for planning, implementing and monitoring the pilot projects. In some cases (as in Chittoor in AP) there are Habitation Water and Sanitation Committees (HWSCs).

4.3 National Details

Funds for the SRPP come from the centrally-sponsored ARWSP. Thus, from April 2000, 20% of the ARWSP annual outlay to state governments is kept back by the GOI for the SRPP, and only the balance is given to state governments. State governments therefore have an incentive to formulate and implement SRPPs, since this is the only way they can utilise the remaining 20% of their annual ARWSP allocation. The disincentive is that the share of state governments that do not use this 20% to implement SRP is given to state governments that report better implementation of sector reforms.

Once selected, each district prepares a detailed project proposal (DPR) and sends it to the RGNDWM. Each DPR specifies the constitution of the new District Water and Sanitation Mission (DWSM) - along the lines specified in the *Guidelines* - and a detailed project proposal with technical and financial estimates (adhering to the principles of sector reform), prepared by the concerned engineers (of the Rural Water Supply Department or the Public Health Engineering Department). On approval by the RGNDWM, the first instalment of

30% of the total project cost estimate is disbursed immediately, with subsequent funds being released in instalments of 30%, 30% and 10%, depending on progress and the approval of the experts of the NSSC visiting the project.

4.4 Synthesis

A comprehensive reform agenda for the water sector in India was laid out by a large joint exercise by the Government of India along with the World Bank and other bilateral and multilateral donors in the late 1990s. The vision for rural drinking water supply included a demand-based, community-managed and conservation-focused approach, which are the key characteristics of the SRPP.

In order to spearhead these pilot projects, a new institutional structure was set up at national, state, district and village levels. The idea was that once the strategy of reform is demonstrated successfully in these 67 pilot districts, PRIs can take on the responsibility of implementing this innovative concept in future projects in other districts, as indeed envisaged in the 73rd Constitutional amendment. The SRPP thus embodies three major shifts in policy thinking:

- **Shift from supply driven to demand responsive provision of rural water supply:**
The SRPPs represent the first step, on a pilot basis, towards a demand-driven and integrated approach to water supply and sanitation.
- **Direct funding from the RGNDWM to the new district-level institution, the DWSM:**
This funding route effectively bypassed the state departments, and was a deliberate attempt to build capacities of PRIs.
- **Government recognition of community management as a legitimate approach:**
Although the Swajal Project in Uttar Pradesh and Aapni Yojana in Rajasthan had state government permission to channel funds for community-managed construction, these were special cases. The SRPP legitimised community management as a large-scale multi-state strategy for provisioning rural drinking water.

Significant as these undoubtedly were, the provisions for implementing this large, ambitious and new programme had not taken on board several of the other lessons available from experiences available from donor-supported and NGO-implemented initiatives in the recent past:

- There was inadequate guidance for this change to government officials responsible for implementing this programme. They had been conditioned for decades to implement supply-driven government infrastructure building programmes for providing rural water supply, and there was little attempt to involve them in conceptual and operational discussions and clarifications. Without these, 'resistance to change' is inevitable.
- There were no discussions with NGOs – the cutting edge on the ground – regarding the huge requirements of time and effort needed to effect community management on the ground had not been adequately provided for.

- Not only was there inadequate capacity building of these key implementers, but the support structure required at state and district levels to provide backstopping and trouble-shooting guidance was missing.

Instead, the entire weight of implementation was borne on official guidelines and letters.

5. Sector Reform In Rural Andhra Pradesh

5.1 The Special Case of Khammam District

The performance of sector reform pilot projects in Khammam and Chittoor districts in Andhra Pradesh (see Box 5.1) forms the basis for the discussion of field-level and other implementation issues. Khammam district was considered a progressive district in Andhra Pradesh because the Panchayati Raj Engineering Department (PRED) had begun community mobilisation efforts on its own from 1997, 2 years before the Sector Reform Pilot Projects (SRPP) were introduced. Around 325 *Grama Deepikalu* (Village-level Women Workers), had been appointed and were carrying out community mobilisation and awareness generating activities to prepare communities to bear the costs of operation and maintenance of water supply schemes. Around 125 villages had formed village water user groups and committees and collected around Rs. 6.8 million (around Euro 121,000) by March 1999.²⁸ This was one of the major reasons why Khammam was chosen for the SRPP.

Box 5.1: Khammam and Chittoor in AP

The state of Andhra Pradesh can be divided into three parts, the northern Telengana districts the southern Rayalseema districts, and the Coastal districts. Khammam is one of the 8 Telengana districts in Andhra Pradesh, while Chittoor is in the southern Rayalseema region.

Yet, Khammam district had its share of problems, with around 30% of its 2,900 rural habitations (average of 160 households and 600 people) not having access to safe potable water (see Table 5.1) despite spending around Rs. 200 million (3.6 million Euros) on on-going schemes.

Table 5.1: Coverage status of habitations, April 1999, Khammam District, Andhra Pradesh

Coverage Status	Number	Percentage
Fully covered (FC) Habitations	2,002	69%
Partially covered (PC) Habitations	753	26%
No safe source/Not covered (NSS/NC) Habitations	161	6%
TOTAL	2,916	100%

Hand pumps in 715 habitations, mini protected water supply schemes (MPWS) in 323 habitations and piped water supply schemes (PWS) in 55 habitations were facing source sustainability problems. Also, there are a total of 433 habitations with excess fluoride, only 249 of which (less than 50%) had RWS water supply schemes, while 85 habitations had

²⁸ DWSC 'Rural Drinking Water Sector Reforms: Piloting in Khammam', Khammam, Andhra Pradesh (undated).

brackish water and only 33 of these habitations were covered by RWS water supply schemes.

All this was the 'normal' supply driven mode of provision (see Box 5.2), and much was expected of the new 'demand-driven' mode initiated in 1997. The announcement of SRPP was thus a fillip to their on-going efforts.

5.2 Approvals

On 7 June 2000, the then Deputy Secretary to the Government of India, RGNDWM, Shri. Bharat Lal wrote to the Principal Secretary (Panchayati Raj and Rural Development) of the Government of Andhra Pradesh, sanctioning a SRPP in Khammam District in Andhra Pradesh for 'institutionalizing community participation in rural water supply programmes'. Khammam district, along with 3 other districts (Chittoor, Prakasam and Nalgonda) in Andhra Pradesh had been selected and the district administration here had prepared and sent the RGNDWM a detailed project report (DPR), costing a total of Rs. 37.53 crores (Euro 6.7 million). This had been approved *in toto*, as had the other districts' proposals for Rs. 40 crores each (Euro 7.1 million).

Accordingly, on 26 June 2000, Shri. R.L. Manohar Reddy, the Chief Engineer (RWS) in Hyderabad wrote to the Superintending Engineers (RWS) in Khammam, Chittoor, Prakasam and Nalgonda districts informing them that the sector reform project had been sanctioned in their districts and that they should comply with the instructions for implementation of the SRPP annexed to the letter from Shri. Bharat Lal (see Box 5.2).²⁹ These instructions emphasised that an extensive IEC campaign should precede construction and that SRPPs ought to tackle *all* problems related to drinking water supply in the district.

Box 5.2: 'Normal' Rural Water Supply Provision

New water supply points are provided either in the form of hand pumps fitted on bore wells, or through piped water supply schemes, which can range from single village schemes to multiple village schemes, termed Community Protected Water Supply Schemes (CPWSS), using either surface water like a river or a stream or ground water as its source. Typically, RWS engineers draw up a series of plans for the development of water resources in the entire region under their jurisdiction (e.g., a district), and await funds to begin implementing these pre-prepared schemes

²⁹ Memo No. AEE13/RWS (Projects)/Pilot Districts/99. The amounts sanctioned to the other districts were uniformly Rs. 40 crores.

Box 5.3: Instructions for Implementation of the Sector Reform Pilot Project³⁰

- a) The estimated project cost is provisional. As such the sanction neither entitles the implementing agency the full sanctioned project cost amount nor restricts the project expenditure to the sanctioned project cost.
- b) No fresh Government appointment of officers/staff to be made for implementation of the project.
- c) The administrative expenditure shall be limited to 5% of the project cost.
- d) The IEC Campaign should be vigorous and the entire district should be exposed to it with a view to achieve maximum effective exposure and should focus according to the requirement of a particular place. The strategy should be intelligently designed to focusing on NC/PC (0-10) habitations in the first phase with a view to cover them first on priority.³¹ Through the IEC campaign, two or more alternative technologies suitable to a particular area along with information regarding the capital cost, the beneficiary share, the O&M cost and the replacement cost, etc. in respect of each of the technology should be offered to the people for them to make a choice of their own. It should be clarified and emphasized that full O&M and replacement costs in respect of the schemes installed under the project are to be borne by the beneficiaries. If the people come up with their own alternative suggestions, it should be preferred if feasible. Further the IEC campaign inter-alia should carry the following important messages:
 - i. The beneficiaries will own the assets created
 - ii. The Government will not maintain the assets created
 - iii. This is the one time investment in the district
 - iv. On completion of the project, the district will be considered fully covered
- e) On completion of the IEC campaign in a group of habitations, the physical work for installation of the scheme on the basis of demand generated should immediately commence without waiting for the IEC campaign to be completed in the whole district, as seeing is believing. Simultaneously, HRD activities related to that scheme, and collection of community share of the capital cost should also commence. The Mission must be informed of the activities undertaken. Expenditure for implementation of the scheme should be met from the funds released as the first instalment of sector reform project. Request for next instalment should be submitted as per requirement of those schemes. Such funds would be released subject to review/confirmation of the demand, and choice of technology of the

³⁰ Annexure I of the letter from Shri. Bharat Lal, Deputy Secretary to the Government of India, Department of Drinking Water Supply, Ministry of Rural Development, to the Principal Secretary (PR & RD), Government of Andhra Pradesh, 7 June 2000.

³¹ NC/PC stands for Not Covered/Partially Covered Habitations. See Table 2.2 on page 22 for definitions.

beneficiaries submitted in respect of that scheme. This process would continue till completion of the project.

- f) State/District should ensure that the pilot project taken will provide safe drinking water facilities to cover all the NC/PC habitation and should take care that all quality problems in all the habitations of the district should be addressed.
- g) Expenditure incurred from the funds released for implementation of the project should be audited by a competent authority annually and audited expenditure figures and certificate should be submitted in April every year starting from April 2001.

The first instalment of the Government of India share of Rs. 10.52 lakhs (approximately 2 million Euros) was released on 30 August 2000 for the start of the SRPP in Khammam. This was for the total hardware component less 10%, which is the community contribution.

5.3 Planning for SRPP in Khammam

The SRPP proposal originally aimed to cover 191 of the habitations not covered (NSS/PC) so far and benefiting 164,451 people through 164 piped water schemes (PWS) involving single villages. The 191 habitations include 107 partially covered and 84 no safe source habitations (Table 5.2).

Table 5.2: Proposed coverage of habitations by Sector Reform Pilot Projects in Khammam District

Type of habitation	Proposed	Total	Percentage
No safe source (NSS)	84	161	52%
Partially covered (PC)	107	753	14%

The proposed water schemes are to tackle four distinct types of water supply problems in these habitations: excess fluoride, brackishness, excess iron and a declining ground water level.

Project Implementation Plan

In September 2000, the GoAP organised a state-level workshop, which resulted later in the preparation of a Project Implementation Plan (PIP) in November 2000. The PIP appointed the Andhra Pradesh Academy for Rural Development (APARD) as consultants for the capacity building, and the State Water Resources Centre and Programme Support Unit (PSU). The PIP for Khammam planned to construct infrastructure for 390 habitations – more than double the original number of 191.

5.4 Community Mobilisation Inputs

The district administration in Khammam had begun its demand-driven initiative in 1997 without the help of NGOs. But it soon found that in order to implement this large work order, in a demand-driven participatory mode with communities, its past experience of working through government staff was insufficient. Convinced still that NGOs were unnecessary and unreliable, and unhappy with APARD's capacity to provide the required training, it looked elsewhere for support. Finally, UNICEF funded 7 development professionals in the District Project Monitoring Unit (DPMU) in Khammam district, who joined in February 2002 and, along with 8 facilitators to work in a variety of implementation fields (see Table 5.3).

By this time, more than 18 months had passed since the project sanction, during which the district went ahead with physical work, contrary to the spirit and provisions of the SRPP. However, when the district asked for the second instalment of funds, a central government team was sent to verify progress, and they were not convinced.

Table 5.3: District Project Monitoring Unit (DPMU) Staff, Khammam District, January 2003

Office staff				
	Name	Designation	Supported by	Location
1	K.B. Narasingha Rao	Member Secretary	PD, DRDA	DPMU/DRDA
2	P. Satyanarayana	Division Accounts Officer	RWS	DPMU
3	R. Narasimha Murty	Assistant Engineer (Projects)	RWS	DPMU
4	E. Pullaiah	CSR (Accountant)	Co-operative (on deputation)	DPMU
5	Md. Jaffar Khan	Senior Assistant	RWS	DPMU
6	P. Praveen Kumar	Senior Assistant	RWS	DPMU
7	Sri Rama Rao	Junior Assistant	Daily wages	DPMU
8	G. Suresh Kumar	Data Entry Operator cum Programmer	Daily wages	DPMU
9	P. Kumari	Data Entry Operator	Daily wages	
10	B. Vikram Singh	Attender	Daily wages	DPMU
11	Madhu Babu	Attender	Daily wages	DRDA (TTDC)
12	Narasimha Rao	Attender	Daily wages	Computer office of Member Secretary
Development Professionals				
1	G. Sreenivas Rao	Monitoring Coordinator	UNICEF	DPMU
2	K. Mahesh Kumar	Communications Organiser	UNICEF	DPMU
3	P. Krishna	Health & Hygiene Promotion Organiser	UNICEF	DPMU
4	K. M. Puttasharanamma	Community Organiser	UNICEF	DPMU
5	Dr. RVV Satyanarayana	Technical consultant (Geologist)	UNICEF	DPMU
6	P. Bharati Bhushan	Civil Engineer	UNICEF	DPMU

Office staff				
	Name	Designation	Supported by	Location
7	Sk. Meer Mohammad Ali	Development Professional	UNICEF	DPMU
8	AM Subhashini	Facilitator	District	DPMU
9	B. Jalaja	Facilitator	District	DPMU
10	Dr. G. Gangadri	Facilitator	District	RWS Sub-division Sathupally
11	B. Vijayashree	Facilitator	District	RWS Sub-division Wyra
12	B. Venkateswarulu	Facilitator	District	RWS Sub-division Yellandu
13	B. Joshi Kiran Prasad	Facilitator	District	RWS Sub-division Burgumpad
14	P. Sharada	Facilitator	District	RWS Sub-division Madhira
15	S. Madhavi	Facilitator	District	RWS Sub-division Kalluru

The assessment³² carried out between 28 – 31 May 2002, reported to the Department of Drinking Water Supply, Ministry of Rural Development, Government of India that:

- Physical coverage is impressive, but awareness generation and capacity building is inadequate.
- No district core team has been formed to work under the DWSSM on a full time basis
- No base line survey was conducted for water management, operation and maintenance, etc.
- No Project Implementation Plan.
- MOUs are in English and not understood by villagers.
- Major expenditure on implementation of water supply schemes suggested by PRED, which is not adequately oriented towards participatory and people-centric approaches, central to sector reforms. Hence, continued the 'casual departmental supply driven mode'³³.

³² Two other independent assessments have also been done, by a Royal Netherlands Embassy (RNE) team from the Netherlands-assisted Project Office (NAPO) in Andhra Pradesh, and by a team from the WSP-SA, which are detailed in Annexure 3.

³³ Assessment Report on Khammam Pilot Project, 28.05.2002 to 31.05.2002.

Their detailed observations were even more critical:

- Very few VWSC members of visited villages know about the programme right from the start (i.e., survey, planning, implementation, taking over operation and maintenance and sustainability)
- Villagers have not discussed any village-level plan before start of any activity
- No PRA/PLA exercise has been conducted, and PRA/PLA training has not been imparted either.
- Estimates have been prepared by the line department personnel and there are no 'people's estimates' in regard to the materials required.
- Instead of convergence of water supply and sanitation, the emphasis is on water supply coverage.

The team recommended that the district be given some time to rectify shortcomings and bridge the gaps pointed out, and that further funding be resumed after a second review to be conducted 3-4 months later – i.e., in late 2002. The RGNDWM endorsed these findings and the then Secretary, Department of Drinking Water Supply, Ministry of Rural Development, A.K. Goswami wrote to the Principal Secretary (PR&RD), GOAP on 12 June 2002 requesting him to undertake the necessary corrective measures before funding could be resumed.

In a letter written in August 2002 to GoAP, the District Collector of Khammam, however, made several clarifications and pointed out factual inaccuracies in the central government report, such as the reported absence of a PIP and a core team (both were actually present), the use of English MOUs (they were in the local language). He also outlined the following steps to foster further community participation:

- Development of training modules and organising training for various stakeholders with the assistance of sector professionals. The preparation of a training calendar, and the start of VWSC members and of Village RWS maintenance workers.
- Launch of a project newsletter as a vehicle for sharing ideas, experiences and aspirations of rural communities.
- Training women (especially SHG women) in tariff collection, accounting, O&M and community management in general.
- Identifying and placing more community organisers to support and strengthen the reform process and further re-orient government engineers.
- Making peoples' estimates and designs a pre-condition for grounding new schemes.
- Identifying tools for community-based water quality monitoring.

He concluded with a plea that the second instalment of funds be released, and an assurance that 'no effort will be spared in achieving the objectives of the Sector Reform Project in Khammam'. The second instalment was then released and the Khammam SRPP started again.

5.5 Subsequent Developments

Several important but belated developments took place at both central and state government levels.

- GoAP ordered a Training Manual to be prepared for use in implementation after field-testing (but it was not ready even by January 2003).
- GoAP also set up a functional state level Project Support Unit (PSU) in March 2003 in the state capital, Hyderabad.
- Finally, comprehensive guidelines for an IEC campaign for sector reform projects were issued by the RGNDWM.
- WSP-SA has engaged a consultant to design a monitoring and evaluation system to record and manage data on sector reform pilot projects.³⁴

Obviously, the implementation of the SRP in Khammam district may have been different had these been in place before the sanctioning of the pilot projects in August 2000.

5.6 The Chittoor Experience

Three innovative aspects of the implementation by the Chittoor Water and Sanitation Society (CWSS) of the Sector Reform Pilot Programme (called *Maa Neeru* or 'our water' in Telugu) are:

- A deliberate focus on poorest and most backward habitations – which not only posed a bigger challenge, but also ensured that progress would be slow, despite the small number of habitations (21) chosen for the first phase.
- A big focus on working with the community – significant investment in Information, Education and Communication (IEC) and capacity building, first of the implementing NGOs and then of the community itself, taking special pains to explain the various aspects of the new programme. The attempt to translate budgetary estimates into local units (e.g., 4 bullock cart loads of bricks, 2 lorry loads of sand, etc.) and have 'people's estimates' deserves special mention.
- The focus on habitations – by forming habitation water and sanitation committees (HWSCs), instead of the usual village-level committee, served to bring decision-making and problem-solving to smaller and therefore more effective units within villages. The CWSS helped framed bye laws and also got these HWSCs formally registered as societies.

³⁴ This system has been pilot tested, but is not operational even in November 2004.

These efforts, while welcome and certainly needful given the severe disadvantages of the chosen habitations, ensured that progress was slow (especially in comparison with Khammam). Unfortunately, instead of allotting more time to let the process come to fruition, an impatience to 'demonstrate' results led to the entire process changing tracks, and implementation being handed 'back' to the Rural Water Supply Department.

5.6 Community Level Impacts

The impact of the SRPP on the village communities in the four selected districts of Andhra Pradesh was obviously influenced by the confusion and lethargy in official circles of the state government. The issues observed in a few villages in Khammam and Chittoor district illustrate the problems faced at the grassroots level.³⁵

Positive Impacts

- Community is contributing: In both Khammam and Chittoor, the community has paid up its share of the capital cost and are contributing towards O&M costs.
- Habitation level committees: The CWSS in Chittoor went one step lower than the village level, to the habitation level, to form water and sanitation committees. This ensures more attention for smaller sized village groups.
- Women are participating: Efforts are being made to involve women in both Chittoor and Khammam, but more so in the tribal areas of Khammam – which anyway are more gender equal than the 'plains' societies in other areas.
- Little community involvement in planning: Although communities have been involved in O&M and finances, their contribution to designs and plans remain minimal. Except in Chittoor, where active efforts were made in the initial period to involve the community, via measures like 'people's estimates'.
- Good rapport between government staff and communities: In both Khammam and Chittoor, local government staff have improved their contact with village communities..

Not-so-positive impacts

- Focus on water supply: As in many other cases, the sanitation component has been largely ignored, despite the rhetoric of integrated water supply and sanitation.
- No community contracting yet: All purchases are still done by contractors and other 'outsiders'. Villagers contribute labour while skilled work is contracted out using standard government tendering procedures.

³⁵ These combine observations by the RNE team (RNE, 2002), the WSP team (WSP, 2002), personal observations, and those of a recent ODI study (Joshi, 2004). The villages visited overlap, and the observations are quite similar.

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- The very poor are still left out: Inadequate attention on the problem of involving the poorest of the poor, is not passing down benefits of the new demand-responsive approach to the poorest (Joshi, 2004).
 - Social and political pressure to sanction schemes: Mainly from vested interests, including contractors and engineers, interested in making money from such schemes. Where villages are politically divided, one side usually thwarts all attempts to unify for common tasks like community management of water supply.
 - Insufficient time spent on institutional development: Capacity building, backstopping and trouble-shooting for nascent VWSCs is not sufficient, and hence their sustainability is doubtful, especially if there are political divisions in the village. The only exception is the initial efforts made by the CWSS in Chittoor.
 - Source sustainability is doubtful: Despite wells being sited by government geologists, there is no verification of the capability of these sources to meet increased future demand.
 - Substantial local capacity building is required: A lot of capacity building is required for both day-to-day O&M and overall management. In addition to more and improved training, there is a need for a supply of proper tools to those trained in repairing techniques.
 - Wastewater disposal is being ignored: The focus is still on water supply and less on environmental sanitation, which can cause problems in future.

But perhaps the most damaging observation came from the SWSM, which compared the Khammam and Chittoor 'models' of implementation.³⁶ The 'Khammam model' implemented SRPP without NGOs and without IEC - counting on the demonstration effect of their earlier work, and pressed ahead with implementation and achieved higher levels of infrastructure spending. The 'Chittoor model', on the other hand, followed the spirit of the SRPP guidelines and focused on IEC activities, which were beginning to yield results, albeit slowly. However, the SWSM decided that implementation had to be at a faster pace and disbanded the NGOs in Chittoor, and switched to the 'Khammam model', with the RWS engineers in charge of all aspects of implementation, including community mobilisation and management. In fact, the Khammam model has been expanded to apply in all pilot districts in AP (Joshi, 2004).

5.7 Synthesis

It is clear that national and state governments were unprepared for the SRPPs, and it took a long time to put in place even the minimal support structure required for implementation, including conceptual clarity, capacity building inputs and a monitoring system. District administrations did the best they could to switch from their supply driven mode of water supply provision to the new demand-driven approach. Even a progressive district like Khammam found the new scale of operation a daunting task. The attempt by Chittoor

³⁶ These terms are from Joshi (2004).

district to follow the spirit of the SRPP and focus on IEC using NGOs resulted in slow progress, and ultimately, was replaced by the 'Khammam model' of rapid physical infrastructural development – a clear hangover from the old target-driven mode of operation.

Village communities responded to the opportunity of sector reform by making their contributions in the hope of an improved water supply. But the formation of committees and a functional takeover of O&M and finances do not constitute community management in the full sense of the term – in the manner in which NGOs and some donor-assisted projects like Swajal had demonstrated prior to the SRPP. The lesson that all members of the community have to be involved for success does not seem to have informed implementation efforts, and as Joshi (2004) found in her in-depth survey of two habitations in Chittoor, the poorest of the poor continue to be left out of 'community' management.

Interestingly, the advice offered by these villages to others seeking to emulate them emphasises political unity before organisational competence, cooperation, local initiative or even faith in the committee. This and other lessons are however ignored by policy makers in their limited perspective of successful implementation being a result of proper policies and guidelines, rather than a result of huge inter-personal efforts in the political context in which implementation is necessarily embedded.

A greater appreciation is perhaps in order, however, at senior government levels, of the constraints and abilities of field level government staff in district offices, who learn over time to work with communities, earn their trust and confidence, and do their best within the confines of government policies, rules, regulations, finances and audits.

Yet, before these insights could be gleaned from the SRPP implementation experience, the Gol scaled up the SRPP into a country-wide programme of community managed water supply and sanitation called *Swajaldhara*.

6. Scaling Up: The Swajaldhara Programme

The *Swajaldhara* Programme³⁷ inaugurated on 25 December 2002 scaled up the Sector Reform Pilot Project into a countrywide programme, with few alterations to the basic design. This is undoubtedly a stupendous step towards scaling up community managed rural water supply in India, considering the dimensions of the country. But scaling up without examining and acting on the available evidence on SRPP performance has overlooked problems that could be potentially expensive to the country as a whole. The larger tasks of sustaining this effort – and improving its quality - still lie ahead.

6.1 Initiating Reform: an Assessment

While the case of Khammam or Chittoor districts may be distinct and difficult to generalise to other parts of the country, it is hard to dispute that the sector reforms initiative could have been improved. Documenting and analysing its performance systematically should have been a pre-condition to scaling it up to a countrywide programme. Some aspects of the SRPP – and now of the *Swajaldhara* - that could have been improved are given below. These are detailed at two levels, state and district levels and at the community level.

State and District Levels

i. Better preparation

For a start, the preparation and build up to the implementation could have been better. Several developments at both the central and state government levels, that could have vastly improved the working of the sector reform pilot projects, were ready only much after the first instalment was paid to Khammam district in August 2000.

'The RGNDWM had an insufficient build up to the SRP, but Khammam district was also over-confident'
Senior district officials in Khammam, January 2003

ii. Adequate awareness

While there were facilitating government orders, training manuals, clarity on institutional structures, establishment of a project support unit, and IEC guidelines, the operational details of the sector reform approach were just not understood well enough by senior and junior level government staff in state and district offices. Thus

With Sector Reform the government seems to be telling communities: 'you are on your own, don't come to us in future'
Senior government officials in Hyderabad, January 2003

implementation of these pilot projects continued in the same supply-driven top-down community-insensitive mode of traditional rural water supply infrastructure delivery – except that the same government engineers were not doing community mobilisation as well. Those who appreciated ground realities of implementation and the mismatch between

³⁷ *Swajaldhara* literally means 'streams of pure water'.

intention (of a facilitative and supportive government apparatus) and the reality took the cynical view that the approach sought to absolve government of any responsibility.

This also underscores the fact that an approach that is well-understood by senior bureaucrats in New Delhi and Hyderabad need not be clearly perceived by even senior level state and district staff. And vice-versa: if those with the knowledge of current field reality had been consulted through seminars and workshops *prior* to formulation of the project or programme, many potential loopholes and flaws could have been spotted and attended to earlier.

iii. Effective Capacity Building

Training manuals are necessary for uniformity in disseminating the project approach and for informing trainers and trainees alike, but a common understanding of the approach is a prerequisite.

However, effective training has also to be tailored to requirements. Teaching engineers how to do a PRA is less important than teaching them why a PRA is useful!

'Need only a change in mindset – not capacity building!' *Senior RWS official in Hyderabad, January 2003*

But district-level demand for good training and trainers – prior to even community mobilisation – had to come from awareness of the importance of good training. And the only way district administration and RWS officials would know about the importance of training is if they were to go through training themselves. Thus, capacity building has to be planned in an iterative fashion, so that personal experience of trainees can turn them into trainers and crusaders for training.

Interestingly, this principle is well understood by district RWS in the context of selecting first round habitations so that 'success can inspire people in other habitations and can be shown as a model for other villagers'.

iv. Realistic O&M Costing

Contrary to the earlier official perception that people are not willing to pay to maintain government assets, the SRPP demonstrated (yet again) that communities are willing to pay - so long

as the need is acute and they can expect improved service after payment. While senior government officials in the country seem to have explicitly realised this and made 100% O&M as a requirement for the sector reform projects, what is not so well understood is that this may not be sufficient for system sustainability. For, to be truly sustainable, O&M collection has to ensure that there is money to *replace* the water supply system at the end of its lifetime. If not, systems will have to be constantly replaced. Indeed, today, the entire RWS sector is facing a financial crisis in India at the moment, with replacement costs being

'People have been conditioned to think that the government must maintain assets. But now the government has changed its mind – feels that beneficiaries must do it!' *Senior RWS official in Hyderabad, January 2003*

several times the available budget.³⁸ Andhra Pradesh faces the dilemma of having to replace around 3,000 hand pumps every year, at a cost of Rs. 30,000 per pump – or Rs. 9 crores (nearly 2 million Euros) on hand pumps alone.³⁹ Even if full replacement is not possible, generating even 10% of replacement capital cost will ensure that the community can re-apply for a fresh water supply project – under the same financial terms - when the existing system falls into disrepair. Such O&M costing, however, while insisted upon in the sector reform project guidelines, is hardly ever followed for the simple reason that this is often beyond the paying capacity of communities. Recognition of this situation ought to have elicited innovative financing schemes by the government.

Philosophy of villagers of Kandukuru village: As long as government gives, we will take; if not, we will do it on our own!

Community Level Issues

vi. Communities were unprepared

While the central government had a reform agenda and vision, this was not adequately transferred to villagers whose effective participation in and ownership of SRPP could have made it a successful example of community managed rural water supply. The cascading flow of information from centre to state to district to village reduced to barely a trickle of relevant and timely information. Even where communities were visited by government staff or NGOs, the messages they carried did not manage to fully inform the communities about the scope of true community management.

vii. BAU in a new garb

In many cases, including Khammam and Chittoor, the way in which physical works were undertaken under the SRPP were almost identical to that under the 'old' system: the engineer prepared the technical drawings of the proposed scheme, the contractor was given the job, the cheque was given by the engineer to the contractor, and the villagers watched the scheme being built and commissioned by a local VIP. What was perhaps different was that some meetings were held in the village concerning the proposed project, the village headman was now required to sign on the technical drawings and on the cheques to the contractor, and the villagers were supposed to elect a VWSC and pay 10% of the total cost as contribution.

In the absence of any special measures to include the poorest and the women in decision making, to ensure that information was available to all members of the 'community', and that the proposed water supply scheme would service the traditionally discriminated sections of village society – the scheduled tribes (like the *lambadas* in AP), the poorest of the poor (who are not credit-worthy and cannot take loans or join Self Help Groups),

³⁸ See, for instance, World Bank (1999a).

³⁹ In fact, hand pumps are to be maintained by cash-strapped Gram Panchayats in Andhra Pradesh. Personal communication, Chief Engineer (RWS), GoAP, January 2003.

including widows, the physically and mentally disabled, the chronically ill, and the aged – the SRPP could be mistaken for business as usual.⁴⁰

6.2 Sustaining Reform: Learning from the Past

As beautifully illustrated in the recent Change Management bestseller *Fish!*, it is perhaps more difficult to sustain change (or reform) than to initiate reform. While the government of India has taken several important steps after Swajaldhara (including passing the new National Water Policy of 2002, and entering into Memoranda of Understanding with state governments to implement reforms)⁴¹, several lessons from India's rich heritage in community managed rural water supply systems as well as contemporary research. These are, once again, laid out in terms of community level issues and those requiring higher-level intervention.

State and National Levels

i. Systematic Monitoring and Evaluation

Conventional official Monitoring and evaluation is content with asking district and sub-district level staff to fill in long proformas which are filed in dusty state government or central government offices after the information is 'aggregated' and put into a report. With the kind of capacity India has in information technology, it is surprising that computerised monitoring systems are only being introduced.⁴² While a comprehensive system is obviously the best, a rapid monitoring system with community participation can be invaluable in spotting potential bottlenecks early and acting on them.

A monitoring system alone, however, is not sufficient. Output from the system has to be tied to management responses, with below benchmark performance calling for more systematic investigation of the problem and above benchmark performance, similarly, being probed for use as role models for cross-visits in the capacity-building programme.

With the advances in ordinal scoring systems, now even qualitative information can be placed on computer spreadsheets and viewed alongside conventional MIS financial and physical progress indicators.⁴³ Web-based storage of process monitoring data, reports and

⁴⁰ See Joshi (2004) for a in-depth critique of the purported demand-responsive approach of the SRPP, and its neglect of traditional forms of community discrimination.

⁴¹ These are outlined in Annexes 4 and 5 respectively.

⁴² See 'Keeping sector reforms on track: a new monitoring and evaluation system for sector reform projects' in *Jalvani* newsletter published by the Water and Sanitation Program – South Asia, New Delhi, Volume 5, No. 2, July – October 2002.

⁴³ Quantified Participatory Assessment (QPA), for instance, provides a robust ordinal scoring system and can be used in a variety of contexts, to investigate a range of issues related to water and sanitation (including coverage, quality of service, environmental sanitation, infrastructure etc.), village institutions (extent of development of community-based organisations, participation of women and the poor in group

case studies makes it easy for remote monitoring of progress even in distant districts.⁴⁴ Hopefully the new system being developed by the WSP will address these issues in future.

But having a system in place is only half the picture. Lessons need to be learnt from the history of waste, misappropriation & misuse of funds and facilities, and cost over runs, and effective action needs to be taken on the basis of accurate information.

ii. Relevant Technology

Hard rock areas and areas with brackish groundwater, high levels of fluoride or iron or arsenic and other water quality problems require different approaches to water supply technology. While sub-missions have been created and funded by the RGNDWM to cater for these special problems in each state, the results of their efforts with new technology (e.g., community and household fluoride treatment kits) don't seem to have been consulted by engineers drawing up technical plans for sector reform pilot projects. In fact, there has been substantial work done on fluoride in Andhra Pradesh by donor agencies such as UNICEF and the RNE, as well as by specific NGOs, but they do not seem to have been consulted by engineers facing the same kind of problems in sector reform districts. Indeed, such convergence should have been insisted upon in the guidelines drawn up for sector reform projects.

Depleting groundwater levels, however, is a larger problem and has to do with overall source sustainability. Source protection measures include building check dams to increase recharge to source bore wells for domestic water supply systems and the implementation of distance norms specified in the Water Land and Trees Act of Andhra Pradesh between irrigation bore wells and domestic water supply source bore wells. But this is often not enough, and an integrated water resource management approach is necessary.⁴⁵

It is equally important to re-examine the sustainability of sources once considered sufficient for piped water supply schemes: over time, water levels in these sources could have declined, making once sustainable sources less so now. However, there is little provision in implementation guidelines to check source sustainability, let alone re-check!

and community decision-making, etc.), hygiene and health behaviour, etc. See for instance James (2002), James and Snehalata (2002), James et al., (2002), James and Kaushik (2002), and NEWAH (2003). This information also has been represented using GIS software and in decision-support tools for integrated water resource management at community level.

⁴⁴ See, for instance, the System for Integrated Monitoring, Assessment and Learning (SIMAL) described in the context of the World Bank-supported Rajasthan District Poverty Initiatives Program (DPIP) in James and Kaushik (2000).

⁴⁵ See for instance the recommendations given in the DFID-funded KAWAD Water Resources Audit (Batchelor et al., 2001) and the APRLP Water Resources Audit (Rama Rao et al., forthcoming September 2003).

iii. Effective Convergence

The new Haryali Guidelines for Watershed Projects announced by the Department of Land Resources, Ministry of Rural Development in March 2003 re-iterates the call in earlier Guidelines to converge all relevant Ministry schemes, including drinking water schemes, wherever there are watershed programmes. Yet, there is little convergence on the ground with Project Implementing Agencies (PIAs) formulating micro-plans and action plans for water harvesting infrastructure without adequate consideration of upstream-downstream effects or indeed of impacts on existing water harvesting structures, including traditional community tanks – which often recharge domestic water sources.⁴⁶

While a watershed or basin level approach towards integrated water resources management is essential, a simple first step is to ensure effective coordination of these government programmes at the district level. The least that this requires is a joint discussion of the annual action plans of the various line departments working in a district – such as the Departments of Agriculture, Rural Water Supply, Irrigation, Soil and Water Conservation, and Forests – under the leadership of the District Collector or CEO, Zilla Parishad.

Since this fragmentation of authority reflects the situation in both State and Central Governments, this will take more than a Government Order from one Central Government Ministry to resolve the crisis of coordination. The Common Approach to Watershed Guidelines was a step in the right direction, but little more seems to have emerged from an initiative that started in April 1998.⁴⁷

iv. Defining government's facilitation role

Despite the rhetoric of the government having to move from being a provider to being a facilitator, there appears to be little understanding of what this really means. Handing over the responsibility of management of water supply services to the community does not mean that the government can wash its hands off its responsibilities for supply provision - it merely means new commitments. But what these commitments are appears to be unclear. Yet, there is mounting evidence that effective capacity building is not happening because the cascade system of training (where state teams train district teams which train village teams) is not working; that horizontal learning is necessary across community groups and district staff; that capacity simply does not exist even at the state level to design new and appropriate training material for capacity building (or for that matter IEC material), using existing feedback for designing effective strategies. Swajaldhara does not have means of

⁴⁶ See, for instance, Batchelor et al., 2003 and James et al., 2003.

⁴⁷ The WARASA Guidelines were published by the Ministry of Agriculture and Cooperation in 2001, but further action from the Ministries concerned with water resources, i.e., Rural Development, Water Resources and Environment and Forests has not been forthcoming. The initial impetus came from a conference on challenges to watershed development in the 21st century, organised by the Ministry of Rural Development in New Delhi in April 1998 (see Farrington, et al., 1999).

ensuring the quality of materials being used – which quite naturally affects the pace and quality of implementation.

v. *Need long term support*

If a 'successful' case of community management, hailed as a model case in South Asia over a period of 8 years, can fall into disrepair and collapse (like the Banki scheme in UP), there is clearly a need for long term support to initiatives promoting community management. The need for such support has been clearly articulated in Schouten and Moriarty (2002), but the lessons for contemporary policy is being missed. It is easy to see existing state government institutions – the Agricultural Universities, rural development training institutes, and government research organisations – as potential resource centres for spawning a new breed of trainers and new training material to facilitate community management. Yet, the reality in many of these districts is that these institutions are cash-strapped, rigidly bound in red-tape and undertake very little contemporary research, while the real innovators and practitioners are the NGO staff working in the districts. While it is true that these are few and far between, developing a network of NGO staff to synergise their accumulated knowledge and experience and promote effective cross-learning across districts and states, has not yet been tried in the case of the Swajaldhara.

vi. *Implement rest of reform agenda*

Finally, the largest assistance that the central government can do is to implement the rest of the reform agenda laid out in great detail by the joint World Bank and Government of India exercise in the late 1990s – while it is still contemporary and relevant. It would indeed be a colossal waste of a pioneering effort to map India's water resources sector and chalk out the routes to better management.

vii. *Traditional techniques and water bodies neglected*

Despite possessing an array of locally-suited, well-adapted and historically-proven techniques for water harvesting, storage and distribution, and institutional mechanisms for their upkeep, these have been allowed to fall into neglect and disrepair since the advent of large-scale water infrastructure. Although this is a situation that India inherited at the time of its political independence in 1947, the Indian government has not made any significant investments in their upkeep or renewal.

The recent attempts to revive community managed water bodies (e.g., the budgetary proposals of April 2004, the World Bank supported project in Karnataka), have not translated into effective policy action on the reform agenda. However, mechanical desilting and repairing of structures is merely paying lip service when the real need is to increase awareness, mobilise support and participation in local integrated water resource management (IWRM).

However, even this does not find place in the Swajaldhara guidelines, and are certainly not being implemented in any significant way at the grass roots level, where large construction

is preferred by all major stakeholders in corruption, with the community being the newest entrant.

viii. Need a wider range of technical options

Effective local IWRM includes a vast range of possible options at the community level, as evidenced in both research (e.g., the AP and Karnataka Water Resource Audits and the WHiRL project)⁴⁸ and NGO action (e.g., roof rain water harvesting, plastic lined ponds, farm ponds, etc.). Despite this experience and expertise, including traditional options, the emphasis in Swajaldhara is still on constructing new engineering structures, probably due to two main reasons: (1) the final responsibility for drawing up the technical drawings and plans for the Swajaldhara projects rests with government engineers, most of whom are either ill-equipped to deal with innovations or new designs or unwilling to take the risk of censure by older engineers, who need to approve these decisions, and unenlightened Government Audit Department officials concerned more about cost norms and 'normal' expenditure patterns than with quality of impact.

x. Behavioural change needs patience and time

As the NGO experience reviewed earlier showed clearly, village-level behavioural change in water supply and sanitation, fostered by outsiders, requires extensive investments of time and effort in rapport building and awareness generation before the villagers are convinced enough to begin demanding the service. This has taken these NGOs several years, but once successful and demonstrated as trustworthy, subsequent implementation is faster – and, with the spread of good news on performance, this can even become self-sustaining.

Yet, projects like the Swajaldhara continue to be run on short 2 and 3 year time horizons, without adequate financial provisions for continued support by NGOs or government departments.

xi. Supplementary activities are necessary to sustain success

Many NGOs have discovered that while water supply and sanitation services are essential, these are probably not financially sustainable on their own, and have hence worked on developing a range of alternative income-generating options for village communities. Gram Vikas, for instance, has encouraged social forestry, using community revenues from grass and non-timber forest produce (bark, leaves, roots and fruits) collected by other villagers, while SEWA has initiated a range of enterprise development activities for its women members, from handicrafts to gum collection, and community plantations. The point is that embedding rural water supply and sanitation services within a context of rural development helps to sustain successful service delivery. Despite the exhortation in the Hariyali

⁴⁸ The AP and Karnataka Water audits are Batchelor et al., (2000), and Ramamohan Rao (2003), respectively, while details of the WHiRL project, which sought to integrate local water supplies within watershed development programmes, may be found at www.nri.org/whirl.

Guidelines for effective field level convergence of government programmes, the Swajaldhara guidelines are, however, silent on this issue, and field level operations have no coordination whatsoever.

6.3 Small Lessons for Scaling Up

The Indian experience yields several lessons not only for the future but also for other developing countries. In addition to the issues mentioned above, detailed facilitating action is necessary at the district and sub-district levels. Since these are very often brushed under the carpet or lost in the fine print or broad sweep buzzwords and phrases like 'participation', 'capacity building', 'IEC' or 'HRD', multi-stakeholder workshops, it is useful to review these briefly.

- (1) Define operating rules at the local level – by involving major stakeholders, including village communities, NGOs, local line department staff, resource persons, donor agencies and others working in the area. This could be part of the awareness raising activity, but getting this group to discuss the project thoroughly will enhance their understanding of the project – and their individual roles and responsibilities.
- (2) Write a clear manual in the local language setting out these operational aspects. This can be used in subsequent capacity building sessions at local and district levels, and to orient new government officials posted to the district.
- (3) Hold regular multi-stakeholder meetings at the district and sub-district levels with line department staff, representatives from local government and community-based organisations (e.g., women's self help groups), to inform them about the intricacies of the new scheme and to discuss trends and problems in implementation, for speedy redressal. Issues that cannot be resolved at this level could be sent up for discussion at similar meetings at the state level. But this has to be done on a long term basis – as a permanent district and state-level support for future interventions.
- (4) Set up a network with office bearers and clear operating principles to assist village communities facing problems in implementing the new scheme. Only if a permanent structure of self-help is set up can communities truly manage their own (water) resources. Critical information needs require resolution at watershed or basin level, in an integrated approach to water management, which requires periodic assessment, and thus a permanent institutional structure. Since local water use is affected, participation by local community representatives in such a network is essential.
- (5) Set up a learning alliance for feedback into future policy: A cohesive effort is needed from the entire water sector, including government, NGOs, donor agencies, and the private sector, to learn and improve, based on the key elements of information flows, networking of effort and multi-stakeholder campaigns. Only such an effort can address the challenges posed by the new dimensions of scaling up – effectiveness and sustainability.

6.4 Scaling Up: Swajaldhara and Beyond

The Swajaldhara is acknowledged as a scaling up of sector reforms. In this sense, the scaling up of community management of rural water supply has already taken place in India. However, there are several lessons that could have been learnt from the initial pilot projects undertaken under the rubric of Sector Reforms. Some of these have been captured here.

Nevertheless, it must be borne in mind that the sector reform project is only one part of a much larger reform agenda identified during 1996 – 1998 in a comprehensive study of water resources in India by the joint team of the Government of India and the World Bank, published as a 5-volume study in 1999. It would be immensely useful if the Government of India re-evaluates its progress against this reform agenda, rather than focus narrowly on the sector reform project, and its scaling up in one area, namely rural domestic water supplies.

It is still not too late for the Government of India to make a comprehensive action plan to improve performance of the Swajaldhara and to initiate similar reforms in other areas of water management, including the inter-linking of rivers, within the overall perspective of integrated water resources management.

But all this still requires a massive effort to understand what is required, generate awareness and agreement among the major stakeholders, and to build capacity to carry forward the initiative. While the Government is adept at framing policies, finding funding, and organising facilitating action through government orders, the real challenge is in motivating district level staff to perform up to the expectation of their real clients, the rural communities. And, rural communities need to be given the institutional space to enforce their status as rural clients for government services, and the capacity to exploit this space effectively, while taking on the responsibility of maintaining assets created by government efforts.

Only when the Sector Reform Pilot Project is placed in this context, does it appear in its true perspective – an important first step in a long and difficult journey. Completing one step is an achievement, no doubt, but resting so early will make it more difficult to rise again in order to complete the rest of the journey.

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Annexure 1: Historical Development of Government Involvement in Drinking Water Supply in India

The 1950s

The Constitution of newly independent India made water a 'state' subject, i.e., the responsibility of state governments. The first national water supply and sanitation programme was started in 1954, during the first Five Year Plan (1951 – 1956), albeit as part of the government's health plan. Each subsequent five-year plan allotted resources to develop and strengthen the state public health engineering department (PHED). During the initial years, however, the lack of materials and of qualified staff to plan and execute water supply projects hampered state and central governments efforts to provide water and sanitation services to the population (Ghosh, et al., 1995). For the 15 odd years till the late 1960s, the government pushed the idea of local community development through its five-year plans, in all spheres of rural and urban development, from agriculture to slum development to water supply provision. Rural water supply schemes were extended to include small urban towns and villages with water scarcity were targeted on a priority basis (World Bank, 1999a).

The 1960s and 1970s

In the late 1960s, however, the GOI changed tack to a direct attack on poverty and, among other measures, gave states the financial authority (in 1968) to sanction rural water supply schemes (subject to certain limits). In 1972-73, the GOI introduced the Accelerated Rural Water Supply Programme (ARWSP) to assist States and Union Territories (see Box 1) with 100% grants to accelerate the implementation of schemes in problem villages. The ARWSP was replaced by the Minimum Needs Programme (MNP) in 1974-75, but was re-introduced in 1977-78 because the progress of coverage under MNP was not satisfactory.

Technology also changed from community water supply schemes fed by rivers and canals to hand pumps fitted on bore wells, and large multi-village community water supply schemes fed by bore wells.

The 1980s

The entire programme of providing water to villages was given a Mission approach, with the formation of the Technology Mission on Drinking Water and Related Water Management (also called the National Drinking Water Mission (NDWM)), as one of five Societal Missions in 1986. The objectives of the National Drinking Water Mission set up in 1986 were to:

- Cover the 137,155 residual problem villages (in April 1986) with safe drinking water
- Evolve an appropriate mix of technology
- Improve performance and cost effectiveness of on-going programmes

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- Create awareness about the use of safe drinking water and
 - Take conservation measures to sustain the supply of water

Comprehensive guidelines were issued 1986, for the first time, for the implementation of the ARWSP, detailing issues such as:

- Implementing agencies in the state government
- Norms for providing potable drinking water
- Criteria for identification of problem habitations
- Priority for coverage of no safe source habitations
- Criteria for allocation of funds
- Operation and maintenance
- Allocations for Scheduled Castes and Scheduled Tribes⁴⁹
- Release of funds

The National Water Policy was drafted in 1987, establishing that national, and not state or regional, perspectives will govern the planning and development of water resources in the country, and also establishing that drinking water should have the first priority while planning multipurpose water supply schemes.

The 1990s

The Technology Mission established in 1986 was renamed the Rajiv Gandhi National Drinking Water Mission in 1991, and continued to be housed in the Department of Drinking Water Supply in the Ministry of Rural Areas and Employment (now called the Ministry of Rural Development).⁵⁰

The sector reform projects, which started in 1999 is thus only one of a series of attempts by the Government of India to provide adequate and safe drinking water to its population.

The 2000s

The nation-wide *Swajaldhara* programme, launched in December 2002, is the latest attempt to address the drinking water problem in rural areas, and is a scaling up of the SRP from a pilot project to a nation-wide programme of community managed rural water supply.

⁴⁹ The Constitution of India identified several castes and tribes, in special schedules, for positive discrimination in developmental activity, citing historical suppression of their rights and privileges. These are collectively called scheduled castes (SC) and scheduled tribes (ST), or more informally, 'SC and ST'.

⁵⁰ Departments in Central Government Ministries are basically modules that can be shifted across Ministries. The location of the Department of Drinking Water Supply outside the Ministry of Water Resources, thus, should not really be puzzling.

“According to the expectations and the needs to scale up reforms in the water sector through out the country, the Sector Reforms Project has been slightly improved and is launched as **Swajaldhara** on 25th December 2002”⁵¹

⁵¹ Paragraph 1.3, section on Swajaldhara on the official Ministry website (www.ddws.nic.in).

Annexure 2: Government and Donor Intervention in Water Supply

Central Government

Although the Ministry of Water Resources in charge of overall planning, coordination and guidance in the sector of water resources (see Box 2.1), the Department of Drinking Water Supply is in the Ministry of Rural Development (MORD). In addition, the Department of Land Resources (DOLR) in the MORD is in charge of watershed-based rural development programmes such as the Desert Development Programme (DDP), the Drought-Prone Areas Programme (DPAP) and the Integrated Wasteland Development Programme (IWDP), which carries out water resource development activities, including building check dams and water harvesting structures (see Box 2.2).

Box 2.1: Functions of the Ministry of Water Resources

- o Overall planning, policy formulation, coordination and guidance in the sector of water resources.
- o Technical guidance, scrutiny, clearance and monitoring of the irrigation, flood control and multi-purpose projects (major/medium) in the States.
- o Infrastructural, technical and research support for sectoral development at the state level.
- o Providing special central financial assistance for specific projects and assistance in obtaining external assistance from the World Bank and other agencies.
- o Overall policy formulation, planning and guidance in respect of minor irrigation and command area development, and also the administration and monitoring of the centrally sponsored schemes in these areas.
- o Overall planning for the development of ground water resources, establishment of utilisable resources, and formulation of policies of exploitation, overseeing of and support to the State level activities in ground water development.
- o Formulation of the national water development perspective and determination of the water balance of different basins/sub-basins for possible inter-basin transfers.
- o Co-ordination, mediation and facilitation with regard to the resolution of differences or disputes relating to inter-state rivers and overseeing of the implementation of inter-state projects.
- o Operation of the central network of flood forecasting and warning on inter-state rivers, the provision of central assistance for some State schemes in special cases and preparation of flood control master plans for the Ganga and the Brahmaputra.
- o Negotiations with the neighbouring countries, like Bangladesh, Nepal and Pakistan, in regard to river waters, water resources development projects, and the operation of the Indus Water Treaty.

Source: Ministry of Water Resources, Annual Report 2001-2002, Government of India, 2002.

In addition, the Ministry of Agriculture and Cooperation (MOAC) also funds and implements watershed-based development programmes such as the National Watershed Development Project for Rain fed Areas (NWDPPRA) and the Watershed Development Project in Shifting Cultivation Areas (WDPPCA), besides externally aided projects like the Integrated Watershed Development Project (IWDP-Hills-Phase II), the Karnataka Watershed Development Project, and Comprehensive Watershed Development Projects in Tirunelveli (Tamil Nadu), Ramanathapuram (Tamil Nadu), Koraput (Orissa), Madhya Pradesh and Karnataka (see also Box 2.3).

Box 2.2: The Ministry of Rural Development

- o The three Departments under this Ministry are the Department of Rural Development, the Department of Land Resources and the Department of Drinking Water Supply.
 - o The Department of Rural Development is in charge of implementing
 - the 73rd Amendment which seeks to establish a 3-tier system of Panchayati Raj Institutions (PRIs) in all major states,
 - *Wage employment generation programmes in rural areas* (Jawahar Gram Samridhi Yojana (JGSY)) the Employment Assurance Scheme (EAS) and the new Sampoorna Grammen Rozgar Yojana (SGRY)) aimed at creating additional employment opportunities during periods of acute shortage of wage employment, as well as need-based rural infrastructure.
 - *Food for Work Programme*, a general scheme which provides food grain in exchange for employment in rural areas
 - *Rural roads programme* (the Pradhan Mantri Gram Sadak Yojana),
 - *Rural housing programme* (the Indira Awaas Yojana (IAY), the Pradhan Mantri Gramodaya Yojana (Gramin Awas) and the Samagra Awaas Yojana)
 - *Self Employment programmes for the rural poor* (Sarnajayanti Gram Swarozgar Yojana (SGSY))
 - *National Social Assistance Programmes*, comprising the National Old Age Pension Scheme (NOAPS), the National Family Benefit Scheme (NFBS) and the National Maternity Benefit Scheme (NMBS)
 - *Food Security programme for senior citizens* (Annapurna Scheme)
 - *Rural Technology support programmes*, through the Council for Advancement of People's Action and Rural Technology (CAPART)
 - *Women's empowerment initiatives* as part of the SGSY, JGSY, IAY, etc.
 - *Rural Sanitation Programmes*,
- besides coordinating training, IEC, land record computerisation and documentation services in rural areas.
- o **The Department of Land Resources** implements all watershed development programmes of the Ministry of Rural Development, although 'programmes relating to conservation, development, and management of land resources remain scattered in different Ministries and Departments' (p. 107)
 - o **The Department of Drinking Water Supply**, is mandated with providing safe drinking water in all rural habitations by 2004 (p. 143), through programmes such as:
 - Accelerated Rural Water Supply Programme (ARWSP) and
 - Prime Minister's Gramodaya Yojana – Rural Drinking Water (PMGY-RDW)

Source: Ministry of Rural Development, *Annual Report 2001-2002*, Government of India, 2002.

Box 2.3: Functions of the Ministry of Agriculture and Cooperation

- o Formulation and implementation of national policies and programmes aimed at achieving rapid agricultural growth through optimum utilisation of the country's land, water, soil and plant resources
- o Undertaking measures to ensure timely and adequate supply of inputs and services such as fertilizers, seeds, pesticides and agricultural implements
- o Providing agricultural credit and crops insurance to ensure remunerative returns to the farmers for their agricultural produce
- o Collection and maintenance of a wide range of statistical and economic data relating to agriculture required for development planning,
- o Organising agricultural census
- o Assisting and advising States in undertaking scarcity relief measures and in management of natural calamities (floods, droughts, cyclones, earthquakes, etc.)
- o Formulation of overall co-operative policy in the country
- o Developing general policy relating to the marketing of agricultural produce, including pricing, exports, etc.
- o Participating in activities of international organisations for fostering bilateral cooperation in agricultural and allied sectors and for promotion of export of agricultural commodities.

Source: Ministry of Agriculture and Cooperation, Annual Report 2001-2002, Government of India, 2002.

Finally, the Ministry of Environment and Forests (MOEF) also implements watershed-based development schemes such as the National Eco-Development Programmes.

State Governments

In addition to centrally sponsored schemes, which are implemented by state governments with a 100% grant from the central government, the State government also implements some schemes where they share the costs with the Central Government.

Within States, the Department of Irrigation is in charge of developing and maintaining major, medium and minor irrigation projects as well as groundwater development, while the Department of Panchayati Raj and Rural Development, the Forest Department, and the Department of Agriculture implement watershed-based development programmes. In addition, the Department of Finance and Planning oversees the work of the state remote sensing agency, which is in charge of investigating and proposing areas in the state for water management, afforestation, etc.

External Support Organisations and non-governmental organisations

Several bilateral and multi-lateral donor organisations (collectively called external support organisations or ESOs) fund rural water supply projects in different states in the country. The World Bank funds rural water supply projects in Karnataka. Typically, ESOs implement

projects either through their own staff or through non-governmental organisations in different districts.

The main role of ESO supported projects is to provide demonstration and experimentation at the project level, including a demand-oriented approach, user participation, cost sharing and cost recovery (WB, 1999a, p. 9).

The central government has put forward three considerations for donors regarding their assistance to India's RWSS sector:

- 'Rural water supply and sanitation should be considered as part of the social rather than the productive sector;
- allocations to the sector should be increased, and
- assistance should shift towards national programs focusing on institutional capacity building at all levels.⁵²

The notable impacts of ESO activity on policy, strategy and approach include the following:⁵³

- ❑ the development of the comprehensive policy statements in the eighth Five Year Plan
- ❑ a government order in the state of Karnataka enforcing a 250-meter zone to protect drinking water wells (the DANIDA assisted RWSS)
- ❑ the broad adoption of the India Mark II hand pump as the national standard (UNICEF's development of hand pump technology and marketing)

⁵² Narayan 1995, quoted in WB, 1999a, p. 9.

⁵³ WB 1999a, p. 11

Annexure 3: Evaluations of the Sector Reform Project in Khammam

1. NAPO Field Visit January 2002

For the Sector Reform Pilot Projects in Andhra Pradesh, the Centre for Development Studies (CDS) at the Andhra Pradesh Academy for Rural Development (APARD) has been appointed the state-level nodal agency for monitoring and evaluation, capacity building of various stakeholders and to provide advice to the GOAP on policy issues. The Netherlands Assisted Programme (NAP) Office, supported by the Royal Netherlands Embassy (RNE) has been working in AP on water and sanitation issues for the last 16 years. A joint team from CDS-APARD and the NAP office visited 5 villages in Khammam between 27 and 30 January 2002. The team made the following observations and recommendations:⁵⁴

- **Initial community contributions:** Roughly 50% of the contributions (5% of estimated cost) are being raised by communities after which scheme construction is being started.
- **Decision-making in Gram Sabha:** Often Gram Sabhas have been the forum for all decisions rather than the VWSCs, especially in tribal areas.
- **VWSC as part of Gram Panchayat:** The Sarpanch is the ex-officio chairman of the VWSC and though not clearly stated, the VWSC is functioning within the ambit of the Gram Panchayat
- **Role of PRED Engineers:** PRED have motivated communities in fund raising and constitution of VWSCs through repeated contact with the communities. Ways need to be found to meet the costs of this aspect of the Pilot Project.
- **Temporary fund flow problem:** There appears to be an administrative problem in transfer of funds from DWSC to VWSCs. However, district authorities have indicated that this is a temporary problem and will be resolved in the immediate future.
- **Source sustainability and protection:** Source construction is being done after well siting by PRED geologists. However, source assessment appears to require attention. Water quality tests are reportedly completed. However, it is not clear whether proper yield tests (step draw down tests) are also conducted. This aspect will become quite important since household level connections are planned in most schemes in future, which will lead to a substantial increase in demand for water. Under such

⁵⁴ Report: Visit to Khammam, 27-30 January 2002', by A. Arokiam and Ms. Nirmala (both APARD) and RK Daw and M. Jayaram (both NAPO), Pages 6-7.

circumstances, capability of sources to meet the increased demands must be verified in advance.

- **Wastewater disposal:** In most habitations household connections are planned through the implications of this source capability (as mentioned above) and wastewater disposal problems have not been addressed. Wastewater disposal, which will become a problem once schemes are operational, has generally been ignored.
- **Supply chain management:** Communities have been put in touch with manufacturers of pipes, pumps, etc. The good offices of PRED have been effectively used in obtaining credit for supplies as well as discounts in prices.
- **Community labour contribution:** Communities are responsible in financial terms for scheme construction and undertake labour-intensive components such as earthwork excavation by themselves.
- **Contracting out skilled work:** Skilled inputs such as construction of OHSRs are contracted out to external bodies by communities using the process of tendering generally followed by PRED (for some schemes).
- **Payment approval procedures:** The process of approval of payments generally conforms to existing PRED procedures. AEEs record progress of construction in their Measurement Books and are co-signatories to scheme bank accounts.
- **O&M ignored:** The area of operation and maintenance has not received much attention as yet. This is an area where substantial capacity-building efforts are necessary, both in the day-to-day operation and maintenance of schemes and in enabling VWSCs to manage schemes.
- **RWS rapport with communities:** The rapport between AEEs, DEEs and RWS-PRED and communities is extremely good with persistent and constant interaction.
- **Technology options planning:** PRED wants to look into technology options in scheme components that will reduce the cost of schemes.
- **Need for process documentation:** While commendable progress is evident at the field level, there is need to document processes and events of the progress of the Pilot Project in Khammam.
- **Women's participation:** The participation of women appears to be much more visible in tribal areas as compared to that of the plains areas. The aspect of gender sensitivity in community organisation needs greater attention.

- **Legal status of VWSCs:** In Khammam, the legal status of VWSC has apparently been questioned in a court of law and has been settled in favour of the VWSC. The High Court has apparently ruled in favour of the method of constitution of a sub-committee functioning under the Gram Panchayat, even though members of the VWSC are not necessarily elected members of the Gram Panchayat. A second legal question that has been resolved is that older habitation committees had to hand over charge of water supply matters to representatives of newly elected Gram Panchayats and new VWSCs. The Court has found that the constitution of the VWSC is adequately provided for in the rules and byelaws of the DWSC, when it was constituted as a registered society.

Key issues noted by the team are the following:

- Khammam has promoted the VWSCs as a sub-committee of the Gram Panchayat with the Sarpanch as the Chairperson. But it is unclear whether this committee will be able to work democratically, consider the views of all households (especially women and the marginalized) before taking decisions, and whether it will sustain over time.
- RWS engineers are under pressure with sector reform work being added to their regular work. The addition of social organisers at the mandal level may help ease this pressure, but must consider the possibility of deputing some Engineers exclusively for this project.
- Additional expenditure incurred by engineers for travel, documentation, etc., which are recognised by the sector reform policy, are not adequately covered. Must consider how to operationalise the suggestion of the RGNDWM to provide incentives for government employees when they work for the sector reforms project.

2. WSP Evaluation in November 2002

A team from the Water and Sanitation Program – South Asia (WSP-SA) visited field sites in Nellore, Prakasham and Khammam districts during 20 – 23 November 2002 and also held meetings with district administration, DPMUs, RWS officials as well as state-level officials of the RWS Department and APARD in Hyderabad. The main observations made by this team are the following:⁵⁵

- **No formal link between the VWSC and the GP:** VWSCs in Andhra Pradesh are outside of the PRI structure. At the same time, there is a sense of the need for a minimal relationship to be established between both. The common model is of a

⁵⁵ ‘SRP/TSC Implementation in Andhra Pradesh: State Review Mission, 20-23 November 2002’, WSP-SA, India Country Team – New Delhi Office, 26 December 2002 (referenced as WSP, 2002a), Pages 7 – 9.

VWSC chaired by the GP President, though in Khammam, the VWSCs are not registered as societies.

- **Water supply infrastructure is already well developed in Andhra Pradesh:** Most of the works undertaken under the SRP consist in rehabilitation-upgrading of existing schemes (which typically involves source development, addition of an overhead tank structure or extension of the distribution network. The expectation of the population regarding the level of services is thus rather high. Furthermore, the acute water quality problems on the coastal area (brackishness and fluoride) led to the development of very sophisticated and costly options (e.g. pumping of surface water over long distance and slow sand filters). The principle of developing a menu of technological options is hence not easy to enforce in this context.
- **Operation and maintenance (O&M):** In the case of individual piped water supply (direct pumping, mini water supply schemes and piped water supply schemes with OHSR), the GPs are already responsible for managing the single village schemes. However, the minor GPs are exempted of power charge, and the major GPs pay the electricity at a very subsidized rate of Rs 0.30 per unit.
- **A cross-subsidy arrangement** has been spontaneously developed at village level, in most cases, both for capital contribution and O&M cost. It is often, but not systematically, based on a distinction between stand-posts and household connections. GOAP has also transferred the responsibility of O&M of the hand Pumps to GPs recently as per the GO MS 421 dated 21.11.2002. Only in the case of comprehensive piped water supply schemes (surface source regional schemes), the State government is entirely responsible for O&M.

The main bottlenecks to implementation identified by the team are as follows.⁵⁶

- Absence of action plans with time frame in the districts.
- Insufficient Community Mobilization, IEC and Capacity Building activities in most of the districts, except in 21 pilot villages and 421 phases I villages of Chittoor
- Non-involvement of communities in designing and planning except in 21 pilot villages of Chittoor district.
- M&E systems are yet to be developed and implemented in the districts.
- Absence of field staff for community mobilization in many districts and insufficient training/orientation to the field staff where in place.

⁵⁶ Ibid, p. 9.

- Adoption of different approaches, institutional models and procedures in different districts.
- Regular guidance, orientation, reviews and support from the State level needs to be improved
- Absence of functional project support unit at the state level.

Annexure 4: National Water Policies of 1987 and 2002

The main points and contrasts between India's first National Water Policy in 1987 and its subsequent revision that was finally approved in 2002 are detailed below.

National Water Policy 1987

- Water is a scarce and precious 'national' resource;
- The basis of planning has to be a hydrological unit, such as a basin or sub-basin;
- Project planning should be for multiple benefits, based on an integrated and multi-disciplinary approach, with special regard to the human, environmental and ecological aspects;
- Groundwater exploitation should be regulated with reference to recharge possibilities and considerations of social equity;
- The conjunctive use of surface water and groundwater should be ensured;
- In water allocation the first priority should be for drinking water;
- There should be close integration of water-use and land-use policies;
- The distribution of water should be with due regard to equity and social justice;
- Water rates should cover maintenance and operational charges and part of the fixed costs;
- Farmers should be progressively involved in the management of irrigation systems and the assistance of voluntary agencies should be enlisted in this context.

National Water Policy 2002

Rapidly emerging policy themes in water management demanded amendment to the existing document. However, the new document has been critiqued as being a simple and rhetoric inclusion of new approaches with few links to the original document and to strategies to operationalise policy. This had been identified as one of the major flaws of the earlier paper. The new changes include:

- Promotion of watershed management through extensive soil conservation; catchment area treatment; preservation of forests and increasing forest cover; and the construction of check dams;
- Appropriate reorientation/reorganisation of institutional structures and mechanisms;
- Involvement and participation of beneficiaries and other stakeholders in the project planning stage itself;
- Optimal productivity per unit of water;
- A participatory approach to water resources management.

Although the new policy makes references to participation and local water initiatives, there is no indication of how these can be put into practice. It has come under fire for its poor conceptualisation of community involvement and management.

Source: Iyer (2003), quoted in Joshi (2004), p. 7.

Annexure 5: Memoranda of Understanding with State Governments

The Approach

To support the sector reform process at the state government level, the RGNDWM has started establishing Memoranda of Understanding (MoUs) with each state government. Each MoU sets out an agreed reform agenda for the state, with milestones and time frames, formalizing the financial relationship between the state government and the RGNDWM. From April 2005, MoUs will be the basis for all activities in the WSS sector in the country.

Sector Assessment

Under the MoUs, each state government is required to carry out an assessment of the rural water supply and sanitation sector, to establish the baseline condition of status (availability, reliability and use) of domestic and school RWSS. The assessment report is a critical document, going over the state's history of intervention in the sector and identifying the main bottlenecks to progress so far, and suggestions to overcome them.

Vision Documents

State governments are also required to provide a state-specific strategy for the sector, based on certain non-negotiable core principles, similar to those of the SRPP. As part of this strategy, the state governments have to formulate a Vision Statement for the state, defining specific objectives for the RWSS sector for the state till end 2007 (end of the 10th Five Year Plan Period) and 2012 (end of the 11th Five Year Plan Period).

Comprehensive State Policy

This document contains the details of finances, institutions, resources and legislative arrangements required to carry out the reform agenda laid out in the vision document.

Annual Action Plan

Following the vision, each state will formulate an Annual Action Plan with details of milestones and deadlines for implementation of the Vision Document.

Agreed Action Framework

Each MoU is signed between the state government and the RGNDWM, and the agreed action framework identifies the agreed milestones in implementing the agreed work plan.

Current Status

A few (5 – 8) progressive states have carried out their sector assessments while others are yet to start. UNICEF and WSP-SA are providing critical assistance to the RGNDWM to evaluate state documents and advise the RGNDWM accordingly.