

Discussion Paper for Preparation of Strategic Plan for rural drinking water sector in Department of Drinking Water Supply, Govt. of India

I. Background

1. The Government of India introduced the Accelerated Rural Water Supply Programme (ARWSP) in 1972-73 to support States and UTs with financial and technical assistance to implement drinking water supply schemes in order to accelerate the pace of coverage across rural India. The entire programme was given a Mission approach when the Technology Mission on Drinking Water Management, called the National Drinking Water Mission (NDWM), was introduced as one of the five Missions in the social sector in 1986. It was renamed as Rajiv Gandhi National Drinking Water Mission (RGNDWM) in 1991 and became the Department of Drinking Water Supply (DDWS) in 1999.

Rural drinking water supply is a State subject and has been included in the Eleventh Schedule of the Constitution among the subjects that may be entrusted to Panchayats by the States.

2. So far since the first five year plan, the Government of India together with the State governments, have spent close to Rs. 1,10,000 crore in the rural drinking water sector. Under the current XI Five Year Plan, the total expenditure is likely to be almost 1,00,000 crores including allocations made under the 12th Finance Commission. By 2022, at the current rate of economic growth, investment in rural drinking water sector is expected to grow at a brisk pace. Correspondingly, the demand for quality service delivery will also increase. At the same time, pressure on water resources from competing sectors such as agriculture and industry will also grow manifold. Therefore, there is a need for setting aspirations, assessing the current situation in the sector and identifying strategies that may be followed by the Government of India to enable the provision of quality drinking water for over 85 crore rural population.

3. The Department of Drinking Water Supply, Government of India is now in the process of preparing a strategic plan for rural drinking water sector to set the aspiration, goals, objectives, strategy and implementation plan for the sector and for the DDWS and the various stakeholders to achieve the goals by 2022 i.e. the remaining two years of the current XI Five Year Plan the next two Plan periods.

II. Defining the aspiration

The Department of Drinking Water Supply, Government of India supplements the efforts of the States in achieve the basic goal of the sector i.e. safe drinking water to all in rural areas on sustainable basis.

The **Vision, Mission, Objectives and Functions** of the Department of Drinking Water Supply as enunciated in the Results Framework Document and in other documents are as follows:

Vision of the Department

Safe drinking water and improved sanitation for all, at all times, in rural India. **The National Goal in rural drinking water sector as per the National Policy Framework** is “to provide every rural person with adequate safe water for drinking, cooking and other domestic basic needs on a sustainable basis. This basic requirement should meet minimum water quality standards and be readily and conveniently accessible at all times and in all situations.”

Mission of the Department

To ensure all rural households have access to and use safe and sustainable drinking water by providing support to States in their endeavour to provide these basic facilities and services.

All rural households have tap connections and get safe piped drinking water with quality as per IS-10500 (desirable limits) standards in adequate quantity as per notified norms in every situation and all times without any need to make arrangement on their own leading to healthy and well-nourished children and adults.

People have some kind of legal right to get prescribed quantity of safe drinking water including surveillance and enforcement mechanism for fulfillment of those rights;

Core purpose/Objectives of the Department as laid down in the RFD, NRDWP Guidelines etc. are/could be to:

In rural areas of the country,

1. enable all households have access to and use safe drinking water;
2. give high priority to SC/ST and minority dominated habitations and BPL households.
3. ensure drinking water security through measures to improve/augment existing drinking water sources and conjunctive use of groundwater, surface-water and rain water harvesting based on village water budgeting and security plan prepared by the community/local government.
4. Issue of potability, reliability, sustainability, convenience, equity and consumers preference to be the guiding principles while planning for a community based water supply system
5. ensure adequate availability of water to meet livelihood and livestock needs.
6. provide enabling support and environment for Panchayat Raj Institutions and local communities to manage their own drinking water sources and systems, and sanitation in their villages;
7. promote participatory integrated water resources management with a view to ensure drinking water security; measurement and metering of water availability, supply and use.
8. ensure all government schools and anganwadis have functional toilets, urinals and access to safe drinking water;
9. provide access to information through online reporting mechanism with information placed in public domain to bring in transparency and informed decision making;

Functions of the Department

- i.) planning, implementation and monitoring of centrally sponsored programmes and schemes for safe drinking water and sanitation in rural areas;
- ii.) conduct periodic performance reviews with all States;
- iii.) supporting R&D initiatives, IEC and HRD activities for all stakeholders in drinking water and sanitation sector;
- iv.) providing support to States in the wake of natural calamities to mitigate drinking water and sanitation problems in rural areas;
- v.) helping the PHEDs to assume the role of “facilitator” for the Panchayats in maintaining drinking water security
- vi.) developing capacity of technical manpower at all levels in technical, managerial, attitudinal and skill set areas.
- vii.) building partnerships and synergizing efforts with other sector partners, organizations, UN and bilateral agencies, NGOs, R&D institutions and civil society in our common endeavour to ensure access to safe drinking water and sanitation for rural communities;
- viii.) enabling States in resource mobilization from external funding agencies;
- ix.) technical support to States through seminars, interactions, documentation of best practices and innovations;
- x.) provide inputs to other Departments / Ministries for formulation of policies impacting water and sanitation issues;
- xi.) formulate and review the Demand for Grant of the Department, respond to Audit observations, VIP references, and administrative functions of the Department.
- xii.) Recognizing and awarding Panchayats and organizations for excellent work in rural sanitation and rural drinking water.

III. Assess the situation

In the Eleventh Plan document, it was decided that the major issues which need tackling during this period are the problem of sustainability, water availability and supply, poor water quality, centralized approach and financing of O&M cost while ensuring equity. In order to address these issues, the rural water supply programme and guidelines have been revised w.e.f. 1.4.2009 as the **National Rural Drinking Water Programme (NRDWP)**. The NRDWP (erstwhile ARWSP) is one of the six components of Bharat Nirman, that was conceived as a plan to be implemented in four years, from 2005–06 to 2008–09 for building rural infrastructure.

Components of the National Rural Drinking Water Programme (NRDWP)

To meet the emerging challenges in the rural drinking water sector relating to availability, sustainability and quality, the components under the programme are NRDWP (Coverage), NRDWP (Sustainability), NRDWP (Water quality), NRDWP (DDP areas), NRDWP (Natural calamity) and NRDWP (Support). In accordance with the policy of Government of India, the Department of Drinking Water Supply has earmarked 10% of the total Central outlay for the programme for the NE States. The earmarking of funds by DDWS and the Centre: State share in funding, will be as follows:

Component	Distribution of annual budgetary allocation	Center : State Ratio
NRDWP (Coverage)	30%	50:50 * 90:10 **
NRDWP (Sustainability) – Swajaldhara ***	20%	100:0
NRDWP (Water Quality)	20%	50:50* 90:10**
NRDWP (Natural Calamity)	5%	100:0
NRDWP (DDP Areas)	10%	100:0
NRDWP (Support)	5%	100:0
Operation & Maintenance (O&M)	10%	50:50* 90:10**

* For all States/ Union Territories except North Eastern States (Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura) and Jammu & Kashmir.

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*** Swajaldhara to be continued and subsumed under NRDWP (Sustainability) component.

At the State Level the programme funds available for different components will be as follows:

- 10% for O&M with 50:50 cost sharing basis between Centre & State.
- 20% for sustainability on 100% Central share basis.
- 45% for coverage and 20% for water quality on 50:50 cost sharing basis.
- 5% for Support activities

Criteria for State wise allocation of NRDWP funds

Under the NRDWP guidelines the criteria for inter-state allocation of NRDWP funds are given below:

Sl. No.	Criterion	Weightage %
1.	Total Rural Population 2001 Census	40
2.	Rural SC and ST Population 2001 Census	10
3.	Rural population managing drinking water supply schemes	10

4.	States under DDP, DPAP, HADP and special category Hill States in terms of rural areas	40
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The 20% of NRDWP allocation meant for “Sustainability” will be used to encourage states to achieve drinking water security through sustainability of sources and systems. The states will be asked to prepare district-wise Drinking Water Security Plans to take up sustainability structures by convergence with MNREGS, Integrated Watershed Management Programme and fund the gaps in the plan from the Sustainability component of NRDWP. This component will be implemented in the form of decentralized, community-managed, demand-driven programme on Sector Reform/ Swajaldhara principles.

For each year the States have to prepare Annual Action Plans for NRDWP focusing on completion of ongoing schemes, priority to coverage of uncovered and quality affected habitations, sustainability measures, taking up support activities of awareness generation, training, capacity building to empower rural communities to manage their drinking water supply schemes.

Main principles of NRDWP

- Move forward from achieving habitation level coverage towards household level drinking water coverage.
- Move away from over dependence on single source to multiple sources through conjunctive use of surface water, groundwater and rainwater harvesting.
- Focus on ensuring sustainability in drinking water schemes and prevent slip back.
- Encourage water conservation including revival of traditional water bodies
- Achieve household level drinking water security through formulation of proper water demand and budgeting at the village level.
- Convergence of all water conservation programmes at the village level.
- Move consciously away from high cost treatment technologies for tackling arsenic & fluoride contamination to development of alternative sources in respect of arsenic and alternate sources/dilution of aquifers through rainwater harvesting in respect of tackling fluoride contamination.
- Treatment of catchment area of drinking water sources through simple measures such as fencing and effective implementation of TSC programme, prevention of sewage/animal waste leaching into surface/ underground water sources, promoting ecological sanitation to reduce use of inorganic fertilizers so as to prevent nitrate pollution in drinking water sources.
- Promotion of simple to use technologies such as terracotta based filtration systems, solar distillation and dilution through rainwater harvesting for tackling iron, salinity and suspended particulate matters.
- Linkage of water quality monitoring and surveillance with the Jalmani scheme for implementation of standalone drinking water purifications systems in rural schools.
- The five grass root level workers trained for testing water quality to be the ambassadors for achieving household level drinking water security in rural India.
- Move away from offline unconsolidated figures to online data entry and linkage with Census village codes.

Changes made in NRDWP

In order to ensure operationalization of the approaches mentioned above, the following main changes have been incorporated in the Rural Water Supply Programme.

- Discouraging non-performance by States. This is done by removing the weightage for the number of uncovered/partially covered habitations and water quality affected habitations in the allocation criteria for central assistance to the States.
- Introduction of an incentive of 10% of the NRDWP allocation for the States that transfer the management of rural drinking water schemes (RWS) to the Panchayati Raj Institutions.
- Increasing the percentage allocation for “Sustainability” component from 5% to 20% for implementing sustainability measures in RWS projects by the States. This component is funded on a 100% Central share basis as against the 50% Central share in regard to other components.
- Introduction of a new component of Support Fund with 5% allocation. Setting up of Water and Sanitation Support Organisation by each State to take up support activities focusing on software activities like awareness generation, capacity building, water quality testing, MIS etc.
- In order to encourage the States of North-East and J&K, that have limited financial resources, the fund sharing pattern for them has been liberalized from the existing 50:50 (Centre to State) to 90:10 (Centre to State)

Central Financial Releases under ARWSP/NRDWP

(in Rs crore)

Year	Allocation	Releases
2005-06	4060.00	4098.03
2006-07	5200.00	4552.30
2007-08	6500.00	6441.69
2008-09	7300.00	7298.79
2009-10	8000.00	7989.72
Total	31060.00	30380.53
2010-11	9000	1571 (as on 1/6/10)

Achievements under ARWSP/NRDWP in last five years

Definition of Coverage

The following norms have been adopted for providing potable drinking water to the population: 40 litres per capita per day (lpcd). To make the norms broad based, the desirable service level is to be decided in consultation with the community under the NRDWP Guidelines. A rural habitation not having any safe source with a permanently settled population of 20 households or 100 persons was taken as the unit for coverage under Bharat Nirman Phase - I. However, w.e.f 1.04.2009 under the new NRDWP Guidelines, all rural habitations irrespective of the number of households have to be covered. In fact the goal now is to ensure drinking water security for all rural households.

Coverage during the five years of Bharat Nirman

The coverage of habitations with safe and adequate drinking water reported by the Department of Drinking Water Supply is given in the table below:

	Un-covered	Slipped-back	Quality-affected	Total
Overall Bharat Nirman Targets	55,067	280,000	216,968	552,035
2005-06				
Target	11,897	34,373	10,000	56,270
Achievement	13,121	79,544	4,550	97,215
2006-07				
Target	18,120	40,000	15,000	73,120
Achievement	12,440	89,580	5,330	107,350
2007-08				
Target	20,931	84,915	49,653	155,499
Achievement	11,457	75,201	18,757	105,415
2008-09				
Target	16,753	101,743	99,402	217,898
Achievement	17,412	113,653	21,531	152,596
Phase I				
Total Achievement	54,430	357,978	50,168	462,576

	Un-covered	Slipped-back	Quality-affected	Total
Balance Status as on 1.04.2009	627	5,10,916	1,79,999	691,542
Phase II				
2009-10				
Target	586	123,408	34,595	158,589
Achievement	253	118,723	32,129	152,510

Coverage of uncovered habitations

In the year 1999 a Comprehensive Action Plan (CAP,99) was formulated based on a Habitation Survey conducted in 1991 and updated thereafter, to cover the uncovered habitations. In the year 2005, when Bharat Nirman was conceived, the uncovered habitations of CAP, 99 as on 1.4.2005 were 55,067 - (4,588 Not Covered- NC and 50,479 Partially Covered-PC).

In 2009-10, the States of Rajasthan, Uttarakhand and Punjab had targeted to cover 586 un-covered habitations. While Punjab could cover 90.3% of the targeted uncovered habitations, the States of Rajasthan and Uttarakhand could only cover 28% of the targeted habitations. Thus 253 of the targeted 586 uncovered habitations were covered in 2009-10.

Addressing problem of slippage:-

In the rural drinking water sector, the biggest problem is of slippage of habitations. Huge investments have been made in this sector over successive plan periods. Despite this, the habitations once covered with drinking water supply slip back to uncovered status due to various reasons like :-

- Sources going dry or lowering of the ground water table
- Sources becoming quality affected
- Sources outliving their lives
- Systems working below rated capacity due to poor operation and maintenance
- Increase in population resulting in lower per capita availability
- Emergence of new habitations.

- Seasonal shortage of water etc.

The long-term solution lies in ensuring the sustainability of sources and systems. The States have been advised to adopt the following strategy:-

- Constructing rainwater harvesting structures.
- Reviving traditional sources.
- Promoting conjunctive use of surface and ground water.
- Supplementing with new schemes for habitations served by outlived schemes.
- Rejuvenation of outlived schemes which are functioning below their rated capacity.
- Providing regional schemes from alternate safe source by extending new pipelines.
- Source strengthening measures.
- Convergence of efforts of MNREGS and watershed development programmes.
- Institutionalization of community participation in water quality monitoring and in O&M of intra-village drinking water infrastructure.

As on 1.04.2009, out of a total of 16,59,741 habitations the States reported that 5,10,916 habitations had nil or partial population coverage (0% to 100%). In the year 2009-10 1,18,723 slipped-back habitations were reported as covered by the States as against the target of 1,23,408 habitations.

Addressing water quality problems

The results of a survey conducted in the year 2000 to identify quality affected areas revealed that there were 2,16,968 quality affected habitations in the country. The States were advised to update the data. The updated data revealed that as on 01.04.2006, there were 1,95,813 quality-affected habitations in the country. In the period 2005-06 to 2008-09 50,168 habitations have been covered. Further, as per the updated status on 1.04.2009, there were 1,79,999 quality-affected habitations. Arsenic contamination is reported in 9,504 habitations of 9 States, fluoride contamination in 33,363 habitations of 18 States, salinity, both in inland and coastal areas, in 32,689 habitations of 17 States, iron contamination in 101,872 habitations of 22 States and nitrate contamination is reported in 2,571 habitations of 9 States. The numbers of quality-affected habitations increase due to reasons like greater testing of sources, increased contamination etc. In the year 2009-10, 32,129 quality affected habitations were covered with safe drinking water against the target of 34,595 habitations.

Priority is to be given to tackling the arsenic and fluoride affected habitations. Though 20% funds allocated under NRDWP are set aside for tackling water quality problems, as a measure of flexibility upto 65% of the NRDWP allocation can be utilized for this purpose.

Constraints and impacting external factors

Resource availability:

- Overdependence on ground water - problem of source sustainability in many areas/ region causing depletion of sources and systems becoming defunct;

- Erratic rainfall, poor replenishment and impacts of climate change leading to natural calamities.
- Dynamic change in hydro-geology (in specific areas)
- Competing demands from agriculture, industry and others affecting drinking water supply sources and systems.

Water Quality:

- Lack of awareness among community in many regions especially about various aspects of drinking water quality, both chemical and bacteriological and hygiene.
- Aggravating water quality problems in many areas/ regions.
- Pollution from domestic sewage, industrial waste, application of fertilizers and pesticides.
- Problem of maintenance of treatment plants and disposal of sludge.

Resource Management

- Presently, fairly good level of coverage but unsustainable management and poor operation & maintenance of water supply systems leading to slippage
- Due to a variety of factors, exclusion of some communities, groups and people in some regions/ areas.
- Short life span of water supply systems especially of hand pumps leading to repeated investment.
- Non-availability of land for water treatment/storage facilities
- Non-availability of affordable power supply causing poor service delivery.
- Forest land clearance
- Problem of steep sloping lands with no provision for sustainability structures

Institutional

- Lack of priority given to coverage of slipped back and quality affected habitations by States.
- States are taking up bigger projects with long gestation period.
- General reluctance to opt for low cost technology.
- Implementation record and fund absorption capacity poor in some States.
- Inadequate capacity of PRIs and local communities to manage water supply in a sustainable and professional manner;
- Lack of professional human resources in PHEDs to steer the paradigm shift in the sector.
- In spite of drinking water supply being a critical service, overall low accountability of the service providers. Hardly any avenue with people to ensure accountability of service providers.
- No enforceable service standards in the rural water supply sector.
- Inadequate engagement of civil society and NGOs in the sector.

System of monitoring and control over the performance of scheme.

Under the Bharat Nirman Programme there has been a fundamental change in the monitoring process wherein the targets and coverage are reported in terms of the names of villages/ habitations. Hence an Integrated Management Information System (IMIS) has been set up. These systems are accessible in the online monitoring page of the department website (<http://www.ddws.gov.in>).

The Integrated Management Information System (IMIS) is a comprehensive web based information system, which enables the states and the center, to monitor the progress of coverage of habitations rural schools and anganwadis, through a

common monitoring format. In addition to this, progress of Sustainability projects and Sub-Mission projects (for tackling quality affected habitations) can also be monitored. The IMIS would enable one to view the names of quality-affected habitations and the list of slipped back habitations along with reasons for slippage and their coverage level. Data on coverage of habitations with potable water has been linked with the census village code for bringing in increased accuracy in the monitoring of the programme on-line.

The State Governments have been urged to enter the physical and financial progress online on a monthly basis and update the habitation wise data on an annual basis. The State officials responsible for online data entry have been imparted training to undertake this job.

Besides, periodic review meetings, video-conferences, State wise reviews and monitoring visits are conducted to review the physical and financial progress in the implementation of scheme in the states.

Field inspections are conducted by designated Area Officers from the Ministry to oversee the implementation of the drinking water programme.

There is also a system of National Level Monitors who monitor the implementation of schemes and enquire into specific allegations received regarding any rural development programme. In addition the Ministry of Rural Development has constituted District Vigilance and Monitoring Committees under the Chairpersonship of the local M.P. which are required to review the performance of all programmes of the Ministry, including NRDWP.

An independent concurrent monitoring survey of NRDWP and TSC is proposed to be conducted.

PPP (Public Private Partnership)

RWS sector at present does not provide a sufficiently attractive environment to induce corporate/ private agencies in sector development. The RWS sector needs to instill financial discipline and effective handling of cost and pricing issues in order to attract private investment. Different modes of PPP are as follows:

Service contracts are the simplest form of PPP. The public authority (PHED) retains overall responsibility for operation and maintenance of the system, except for the specific system component that are contracted out. The contractor's responsibility is limited to managing its own personnel and services efficiently. Typically, service contracts are used for maintenance in components such as pumping stations and meter reading. Payment is usually on a lump sum or schedule of rates basis.

Management contracts are a more comprehensive arrangement, where the public authority transfers responsibility to a private contractor for the management of a range of activities such as the O&M of a water supply distribution system or major sub-system.

Lease contracts, is where a private operator rents the facilities from a public authority (PHED) and is responsible for operating and maintaining a complete system and collecting the tariffs.

BOT contracts, (build, operate, and transfer) is a form of concession whereby a private firm or consortium agrees to finance, construct, operate, and maintain a facility for a specific period, before transferring the facility to a government or other

public body BOT arrangements are attractive for new plants that require large amounts of finance, such as large water supply projects.

Water Rights

Existing Acts/Legislations available in the Country for protect, control/ abatement of pollution of water bodies are as under:

- Water (Prevention & Control of Pollution) Act, 1974
- Water (Cess) Act, 1977
- Environment (Protection) Act, 1986

The existing water law framework in India is characterised by the coexistence of a number of different principles, rules and acts adopted over many decades. These include common law principles and irrigation acts from the colonial period as well as more recent regulation of water quality and the judicial recognition of a human right to water. Different state and central legal interventions and other principles do not necessarily coincide and may in fact be in opposition in certain cases. Thus, the claims that landowners have over groundwater under common law principles may not be compatible with a legal framework based on the human right to water and the need to allocate water preferentially to domestic use and to provide water to all, whether landowners or not on a equal basis.

Findings of last review / evaluation of the schemes made by the Planning Commission or by any other agency.

An Evaluation Study was conducted by the Economic & Monitoring Wing of Ministry of Rural Development for Sub-Mission (Quality) Projects under ARWSP in the States of Uttar Pradesh, Orissa, Rajasthan, Andhra Pradesh, Tamil Nadu and West Bengal. The objectives of the study were to assess the level of community awareness on issues pertaining to drinking water, initiatives taken by households in the matter, and infrastructure development and outputs. The major findings of the evaluation study are:

- Overall, the implementation of the Sub-Mission (Quality) Projects was found to be satisfactory. In Tamil Nadu, 91% households were drawing water from these projects, while it was 84% in Andhra Pradesh, 68% in West Bengal and 53% in Orissa.
- Community awareness was quite high regarding water quality problems of the respective area, health hazards, correct method of treating the water and correct method of storing water. However, the practice of safe water was not very common.
- Collection of user charges was not adopted by a majority of the Gram Panchayats.
- There was a near absence of community participation in all stages from planning to implementation, despite it being very strongly mentioned in the ARWSP Guidelines.
- State level laboratory and at least one laboratory in each District was available in all the surveyed States.
- The field test kits have been provided and field-level functionaries were properly trained.

Strengths and Weaknesses (as per All India Impact Assessment study of ARWSP during 2004-05 to 06-07)

STRENGTHS

PRI system is very strong in some States

DWSM is playing a vital role in some states

NRDWP and TSC are operational by single department except in 6-7 States implying automatic convergence between water and sanitation

Rewarding performance and community ownership are strong points in NRDWP

Reform initiatives are already operational in some States

VWSC is formed in most of the GPs

Awareness generation for community mobilization reported in 19 out of 27 States surveyed

In 56.9% of villages surveyed, GPs suggested and finally decided on the location of the scheme.

Almost 82% of beneficiaries reported that the distance of fetching water reduced by upto 1 km

WEAKNESSES

Expenditure on SC/ST population is less than 35% in all States except 7 States

Except for HP, the % achievement against fixed targets was less than 75%

No Annual action plans were drawn by 4 States

Decision on selection of habitations to be covered taken at the State Government level only in 14 States.

Involvement in the planning process for O&M done at the State level in 9 States

No role is played at the State level for planning for sustainability structures in 10 States

Coverage of quality-affected habitations is slow in almost all States

There is an increasing trend in dysfunctional assets from 2004-05 to 06-07

Mechanical fault at the delivery point is the predominant factor for non-functionality of assets. However, these simple problems are not attended

Simple solutions for tackling iron problems are not taken up

Still 12.02% of households surveyed reported that they are not drawing water from assets created under erstwhile ARWSP

O&M costs are met by GPs only in 38.57% habitations surveyed

User charges collected only in 11.61% GPs surveyed

Choices and preferences of local people were not taken in 3 States

GPs decided the choice of technology for tackling water quality problems only in 10.56% villages surveyed

People are trained in taking up simple O&M problems only in 20% villages

Non-functional assets were the highest in those villages where community participation did not exist.

In 28.66% villages surveyed, 100% households are not getting the basic minimum supply level of 40 lpcd

8.79% of adults and 11.53% of minor children still suffer from

diarrhoea

Women members in VWSC exist only in 30% villages surveyed

Involvement of women in decision making for selecting the location of the scheme was reported only in 22.47% villages

Another **Evaluation Study of Accelerated Rural Water Supply Programme (ARWSP)** was conducted by the Economic & Monitoring Wing of Ministry of Rural Development. The main objective of study was to evaluate the functioning of ARWSP in terms of its stated objectives & guidelines. The study aimed at providing a quantitative & qualitative review of the status of implementation of the programme. The draft Report has been received and is under examination. However, the major findings of the evaluation study are:

- Coverage of SC/ST households has been achieved in the desired proportions in majority of States.
- Slippage of habitations back to NC/PC was a widespread phenomenon.
- 71.34% habitations of the habitations covered under the study were getting adequate quantity of drinking water
- 37.53% households surveyed reported drawing water from ARWSP facility that were earlier drawing unsafe water in pre-ARWSP period.
- 58.64% of households surveyed reported improvement in taste of water supplied. However, households in the States like Bihar, Chhattisgarh, Haryana, Jharkhand, Punjab, Himachal Pradesh, Uttar Pradesh & Uttarakhand reported almost no change in quality of water.
- 71.07% households reported reduction in the distance travelled to water source.
- 51.56% households reported reduction in waiting time at water source under ARWSP facility provided.
- In the surveyed habitations, 19% of the households reported reduction in occurrence of water borne diseases amongst adults and children.

A performance audit of ARWSP, covering the period from April 2002 to March 2007, was conducted between June and October 2007. This involved field audit of the relevant records of the Department of Drinking Water Supply (Ministry of Rural Development), State Governments, and District and State Implementing Agencies (Public Health Engineering Departments, Jal Nigams etc.) in 26 States. The audit revealed the following:

- i. Surveys of habitations at periodic intervals are important in assessing ground-level coverage of access to safe drinking water. There were significant deficiencies in the conduct of the 2003 National Habitation Survey at the States, adversely affecting assurance regarding the quality and reliability of the survey data, and thus it's utility for planning purposes.
- ii. In the absence of Annual Action Plans based on a detailed and comprehensive habitation-wise analysis in many States, targets were being fixed on a numerical basis, and works taken up in an ad hoc manner. This adversely impacts the coverage of habitations, especially the prioritization for incomplete works and Not Covered (NC)/ Partially Covered (PC) habitations.
- iii. There were several instances of deficient financial control, besides instances of inadmissible expenditure and diversion of ARWSP funds.

- iv. Contrary to the scheme's objectives, slip back of fully-covered habitations and re-emergence of problem habitations continued to be a major problem, thus raising the issue of indefinite continuity of the programme.
- v. States did not pay adequate attention to water quality. The infrastructure for testing and monitoring water quality, especially at the District level, was inadequate and periodic testing requirements were not complied with. Distribution and utilisation of field testing kits at the GP/ VWSC level was also poor.
- vi. Some States had initiated innovative practices for water sustainability, including implementation of a State-wide water transmission grid, use of IEC campaigns for promoting water conservation, and use of remote sensing technology for assessment of impact of recharge structures. However, many States did not take adequate measures for ensuring sustainability of water resources especially ground water. The proportion of schemes relying on

Impact of drinking water schemes/programme on provision of drinking water supply in rural areas

The coverage of habitations and households has been constantly improving with the assistance provided under ARWSP/NRDWP.

The Census 1991 showed that 55.54% of the population had access to an improved water source, which improved to 86.77% in Census 2001. At the end of 2008-09, the Department's database showed an increase in habitations to 16.61 lakhs, with 14.99 lakh (90%) in the FC or PC category. This coverage is in the form of various systems, predominantly hand pumps, single village piped water supply schemes and multi village schemes. With the focus now on household security for drinking water, the States have been asked to provide information on population coverage in addition to habitation coverage. This is now being updated online on the IMIS.

The coverage status of populations in the habitations (as on 01.04.2009) is as under:

S. No.	State Name	Total Habitations	Habitations with Population Coverage 0	Habitations With Population Coverage >0% and < 100%	Habitations with 100% Population Coverage
1	ANDAMAN and NICOBAR	0	0	0	0
2	ANDHRA PRADESH	72,147	5,532	0	66,615
3	ARUNACHAL PRADESH	5,612	0	3,518	2,094
4	ASSAM	86,976	28,394	21,075	37,507
5	BIHAR	1,07,642	0	48,040	59,602
6	CHANDIGARH	18	18	0	0
7	CHATTISGARH	72,329	756	46,119	25,454
8	DADRA & NAGAR HAVELI	70	70	0	0
9	DAMAN & DIU	21	21	0	0
10	DELHI	0	0	0	0
11	GOA	347	0	45	302
12	GUJARAT	34,415	0	1,753	32,662
13	HARYANA	7,385	0	1,355	6,030
14	HIMACHAL PRADESH	53,205	5,011	13,638	34,556
15	JAMMU AND KASHMIR	12,331	4,806	3,676	3,849
16	JHARKHAND	1,20,473	1,107	607	1,18,759

17	KARNATAKA	59,203	244	33,996	24,963
18	KERALA	11,883	0	0	11,883
19	LAKSHADWEEP	9	9	0	0
20	MADHYA PRADESH	1,27,197	0	77,766	49,431
21	MAHARASHTRA	97,206	0	19,752	77,454
22	MANIPUR	2,870	463	1,371	1,036
23	MEGHALAYA	9,326	206	3,883	5,237
24	MIZORAM	777	0	429	348
25	NAGALAND	1,386	280	175	931
26	ORISSA	1,41,928	1,875	76,114	63,939
27	PUDUCHERRY	248	0	40	208
28	PUNJAB	14,221	1,798	2,480	9,943
29	RAJASTHAN	1,21,133	38,621	17,444	65,068
30	SIKKIM	2,498	0	890	1,608
31	TAMIL NADU	92,689	0	10,248	82,441
32	TRIPURA	8,132	2,559	2,855	2,718
33	UTTAR PRADESH	2,60,110	0	0	2,60,110
34	UTTARAKHAND	39,142	4,938	8,766	25,438
35	WEST BENGAL	95,394	2,726	11,582	81,086
	Total	16,58,323	99,434	4,07,617	11,51,272

This information has been entered on the online IMIS in 2009. No independent assessment has been carried out for this data.

Important Stakeholders

- Panchayati Raj Institutions/ Village Water & Sanitation Committees
- DWSMs, SWSMs, State Dept dealing with RWS
- Women SHGs
- Civil society, NGOs/ CBOs, etc.
- Charismatic leaders
- State Departments dealing with TSC, MNREGS, IWMP, NRHM, SSA, WCD, Agriculture etc.
- Other Ministries/Departments of Government of India i.e Water Resources, Rural Development, Land Resources, Agriculture, Urban Development, Environment and Forests, Health and Family Welfare, Housing and Urban Poverty Alleviation, Women and Child Development, School Education and Literacy, Social Justice and Empowerment
- Community/ political leaders
- UN agencies, funding/ banking institutions,
- Private contracting agencies, manufacturers, suppliers, consulting agencies,
- Scientific and academic institutions

IV. Strategy for the Future

- Move away from over dependence on single source to multiple sources through conjunctive use of groundwater, surface water and rainwater harvesting.
- Communitization of drinking water supply schemes with focus on empowerment of PRIs – Involvement of PRIs right from planning stage, implementation and handing over assets created within their jurisdiction.
- Metered bulk water by the water supply agency (PHED) to the GPs and household metered connections within GP for effective tariff collection.
- Piped water supply with Household tap connection in every rural household with safe drinking water availability on 24x7 basis
- Coverage of all rural schools, anganwadis and community buildings with safe drinking water through metered tap connections
- All quality affected and uncovered habitations to be covered by 2011-12.
- Marking of all targeted habitations online giving priority to targeting of quality affected, 0% to 50% population covered, SC, ST & Minority dominated habitations and LWE affected districts.
- Effective convergence with other Government programmes like MNREGS, Watershed management programmes for source sustainability.
- Effective dovetailing of funds under 13th Finance Commission and other sources to bridge the resource gaps, particularly for O&M.
- Providing revolving fund to Gram Panchayat for maintenance of schemes.
- Improving energy efficiency, reduce unaccounted water losses and conducting regular water, energy and social audits of water supply projects.
- Promoting rainwater harvesting, water conservation, revival of traditional water harvesting systems and low cost technology options for drinking water.
- Focus on use of new and renewable energy sources to reduce operational costs
- Decentralized water quality monitoring and surveillance, testing of drinking water sources by trained people of GPs through field test kits, sanitary surveillance of all drinking water sources, water quality monitoring at sub-division, district and State level water testing laboratories

- Preparation and updation of HGM maps for identification of correct sites for drilling new borewells and build recharge structures.
- Participatory preparation of village, block and district water security plans
- Participatory water management including of water demand and budgeting based on watershed/aquifer/hydrological unit approach to ensure drinking water security.
- Introduction of dual water supply schemes to quality affected habitations for drinking and cooking purposes
- Online IMIS for close monitoring of all the related activities under rural water supply sector
- Shift from conventional database/maps to web-based GIS environment.
- Incentivize good water management by GPs through Sajal Gram Puraskar for achieving drinking water security on 24x7 basis.
- Appropriate awareness generation and capacity building of PRIs.
- Under R&D, scientific studies shall be promoted on improving water quantity and quality along with studies on soft issues like IEC, HRD, policy issues, sanitation, health and hygiene related issues.

Questions for guiding the discussions in the Consultative Workshop

Aspirations

- What should be the aim and target over the next 12 years and what should be the milestones in achieving them (ex: by 2022, 100% of rural population will have drinking water security through: household taps (50-60%), hand pumps (20-30%) and other means (??) , 24X7 basis(?))
- What will be the standards of water supply in rural India by 2022 in terms of quantity and quality? Will they be same as urban India? How to address rural- urban disparities?
- Whether IS-10500 standards for drinking water quality should be uniformly applicable throughout rural India? (for drinking, cooking and domestic purposes)

Status

- What is the current status of drinking water security? How many GPs in every state have water for all throughout the year? This will help in setting benchmarks
- What are the areas that are seriously water stressed? What proportion of rural population is living here and what do we do in these areas?

Strategies

- How to ensure larger coverage of households with individual tap connections?
- Is it desirable to have 24X7 water supply? If so, how to move towards 24&7 water supply?
- How to ensure that the most vulnerable and marginalised especially SC, ST, minority dominated habitations, migrants, labour colonies, nomadic communities are provided with safe and adequate water supply?
- Gender issues and empowering women in RWS sector management. How to achieve it?
- What should be the lowest unit for planning and design of RWS schemes? (GP, village, habitation)
- With rapid urbanization, what should be the approach for peri-urban areas which are basically rural areas?
- Whether dual water supply can be provided by in-situ treatment technologies? If so, whether such systems should not be considered only because of reject management issue even when impacts of rejects are not hazardous?
- What should be the role of different stakeholders viz, PRI, PHED, DWSM, WSSO, SWSM, etc.
- What kind of institutional structure is desirable to achieve the goals in a transparent and accountable manner? How can such structures be incentivized?
- What should be role of the private sector and of public-private partnerships in achieving the goals set for 2012, 2017 and 2022 in terms of a) production of safe water, b) its conveyance and c) distribution?

Implementation Plan

- How will different types of schemes be managed? Who will ensure proper maintenance and service delivery? How much should be recovered from users for each type of intervention?
- How to ensure management of RWS schemes by the GP? How to ensure Finance Commission funds are transferred to GP mandatorily and mechanism for creating revolving fund?
- How to leverage 10% incentive funds under NRDWP for States handing over schemes to PRIs?
- How should the DWSM and WSSO be strengthened to carry out their roles?
- To bring in transparency, what is the mechanism for introducing social audit and who will do it? Who will be the certifying authority?
- How to ensure testing of all water quality sources regularly?
- Under IMIS, what should be the lowest level of data entry? (GP, Block, Sub-division, District)
- What is the experience or policy in your State regarding regulation of water?
- What should be the regulatory mechanism, if any, for water or drinking water to ensure adequate supply of water for domestic purposes and for protecting water quality?
- How to build a committed group of officers that are technically competent?
- How to utilise IT and data base management system that links all the states and updated in a timely manner for better delivery of services;
- How to use enormous spread of mobile phones to monitor, redressal grievances, obtain community feedback etc.
- How to use award scheme say Sajal Gram Puraskar to achieve objectives?