



# Safe drinking water to all

## Long-term water security

### Interface

#### Technology developer and other stakeholders



September 7, 2010



# A basic human need



- **Safe drinking water : A pre-requisite for :**
  - better health and improved productivity,
  - faster socio-economic development, and
  - sustainable economic growth,
- **Poor and deficient services or lack of it :**
  - disrupts life and activities at all level,
  - cause strain and slow-down the economic growth,
  - puts severe strain on systems to make emergency arrangements year after year,
  - Social unrest, and
  - discourage investment and affects productivity & prosperity

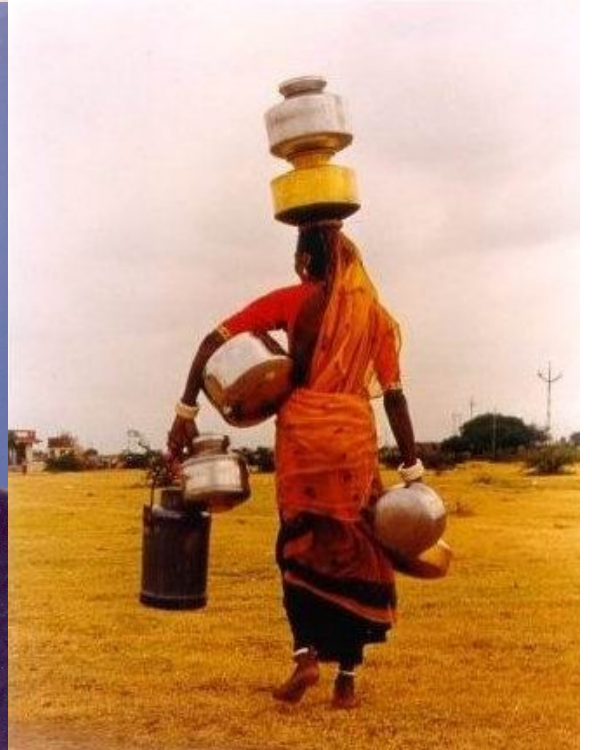
# Water scarcity



# Drinking water scarcity







## Drought prone areas



## Supply through railways



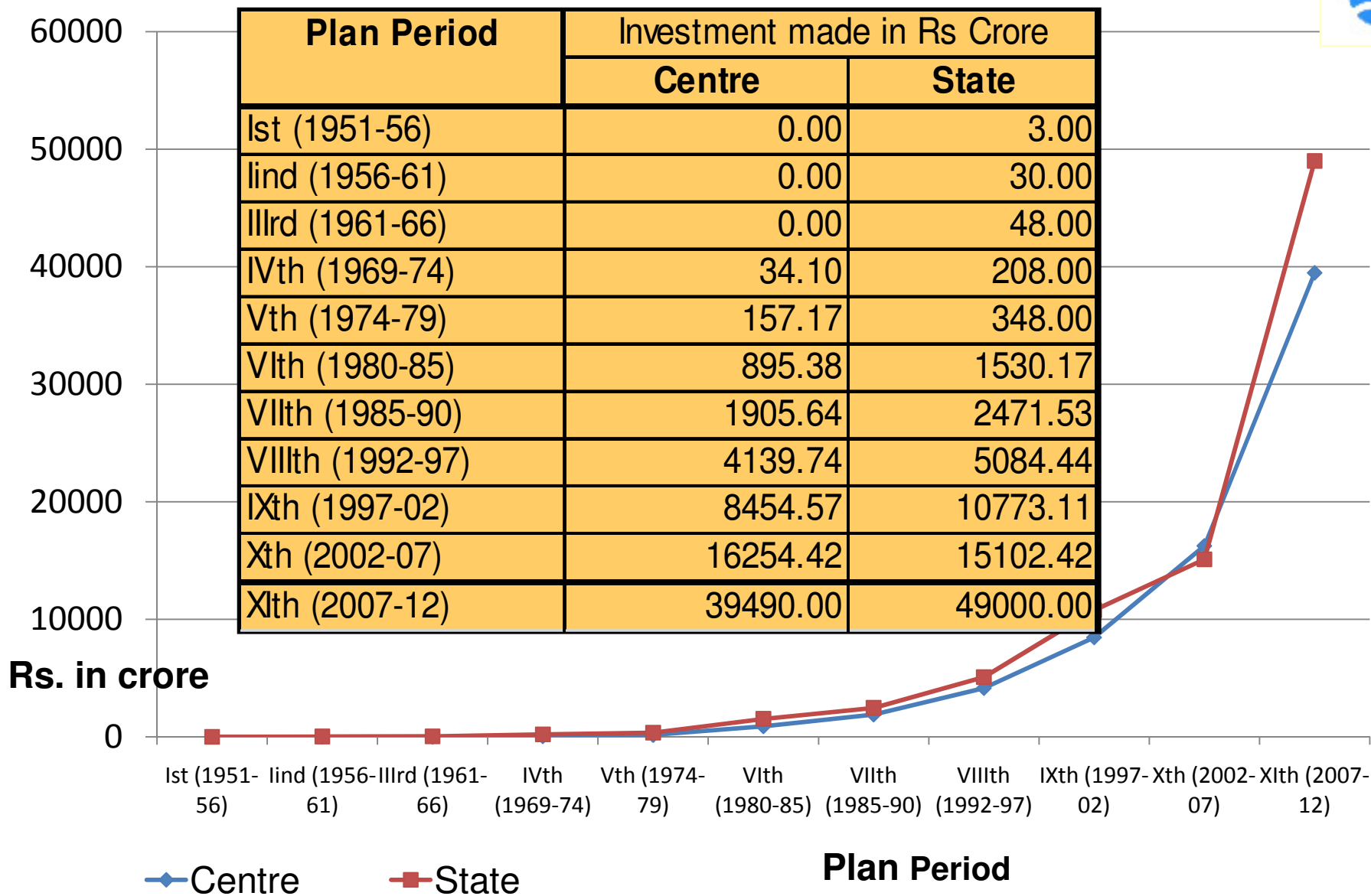
Supply through tankers



Quality Problems –  
Fluorosis, Salinity, Nitrate



# Investment in RWS water sector

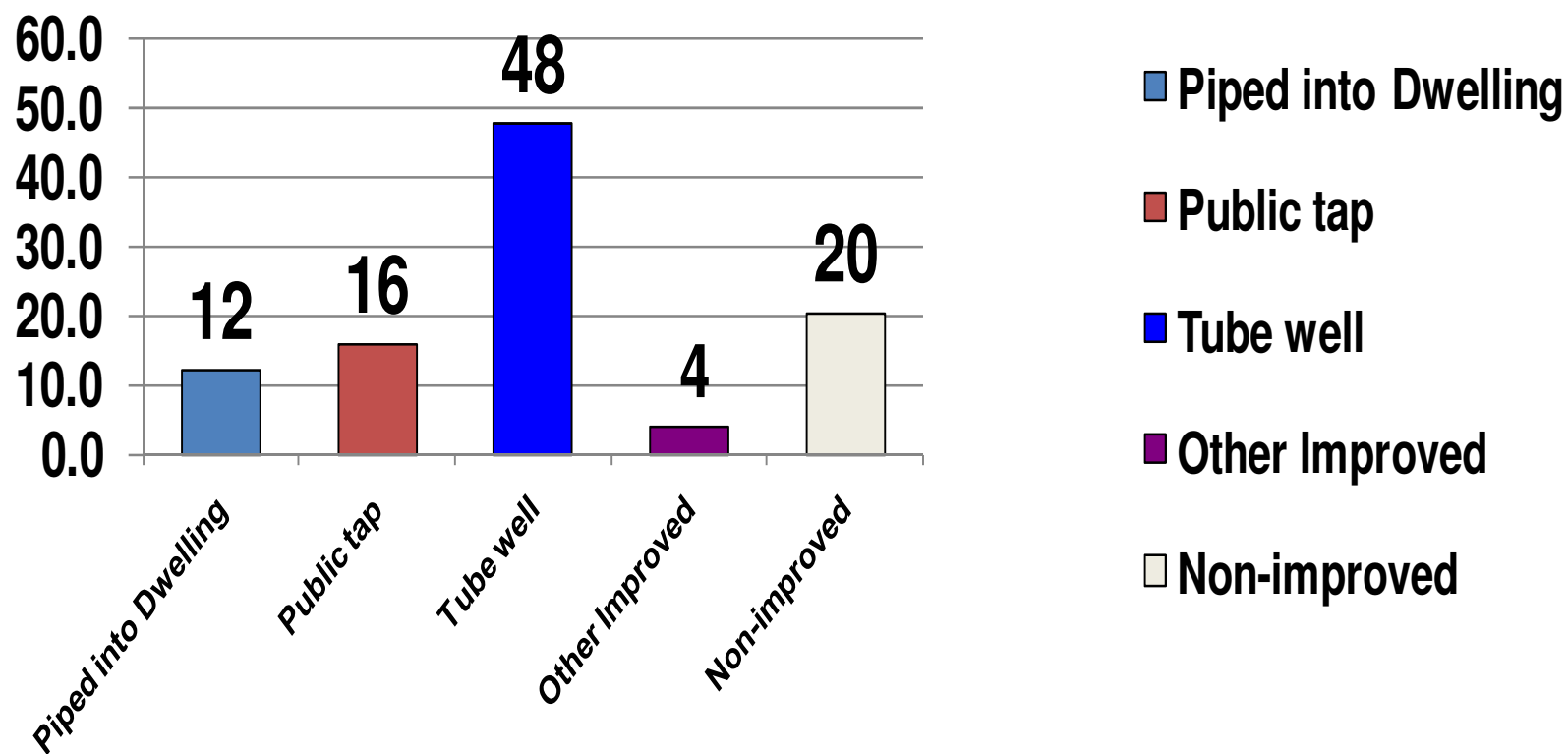






# Source of drinking water to households

[DLHS – III (based on 2005-06 data) in percentage]



## Percentage households with piped water connections (source: NFHS – III based on 2005-06 data)



State	Percentage
Delhi	48.7
Himachal Pradesh	46.6
Gujarat	46.1
Goa	44.0
Arunachal Pradesh	38.2
Maharashtra	36.9
Uttarakhand	31.0
Jammu and Kashmir	29.9
Haryana	29.7
Punjab	26.4
Sikkim	19.7
Andhra Pradesh	18.3
Nagaland	16.3
Karnataka	15.8
Tamil Nadu	14.8

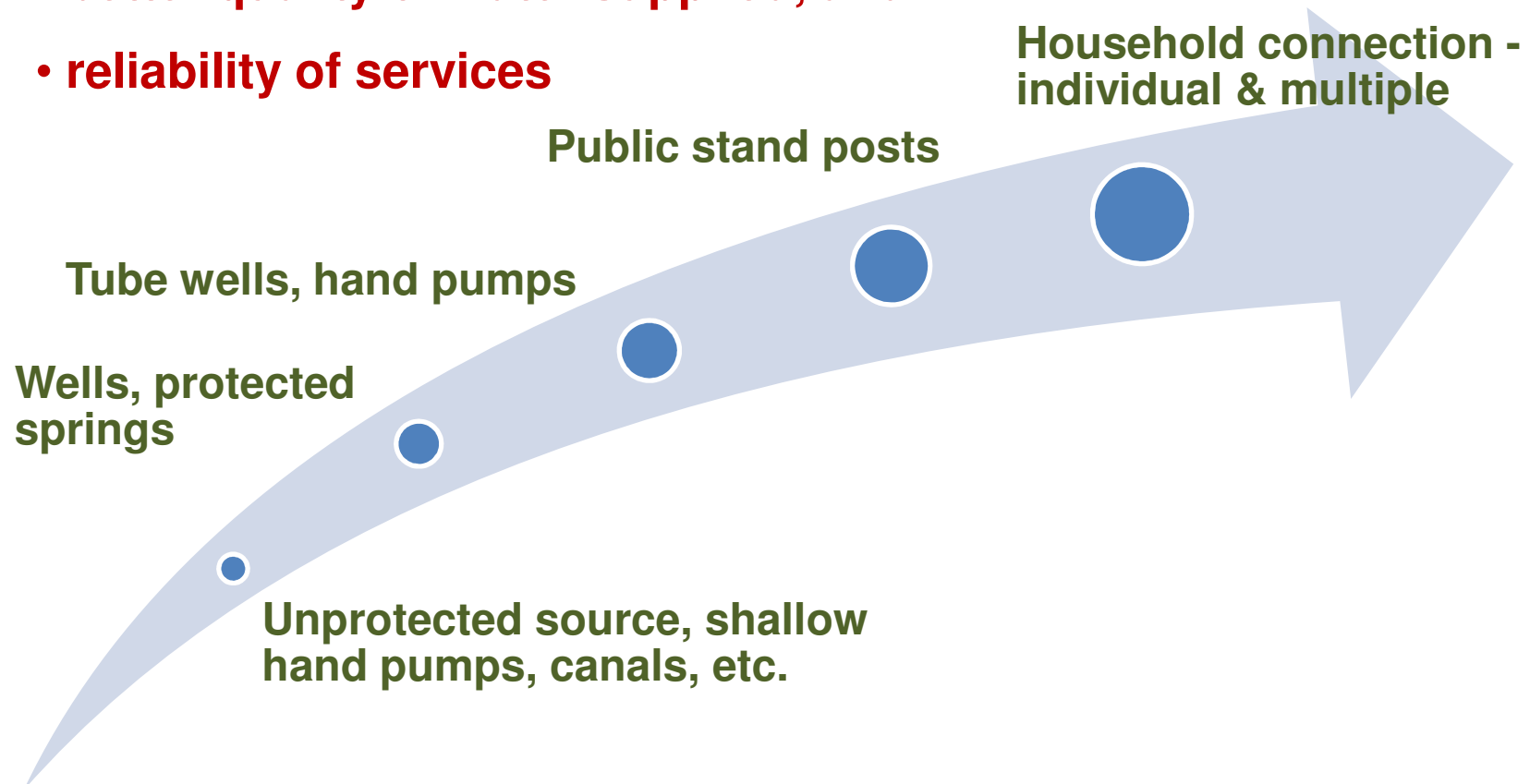
State	Percentage
Mizoram	13.9
Rajasthan	13.7
Meghalaya	10.4
Tripura	7.8
Kerala	6.9
Manipur	5.1
Madhya Pradesh	4.4
Chhattisgarh	2.4
Uttar Pradesh	1.2
Assam	1.1
West Bengal	1.0
Orissa	0.4
Bihar	0.0
Jharkhand	0.0
India	11.8



# Rising expectations

With increasing awareness, economic prosperity, people realizing the importance of time, rise in demand for :

- **adequate quantity of water**
- **better quality of water supplied, and**
- **reliability of services**

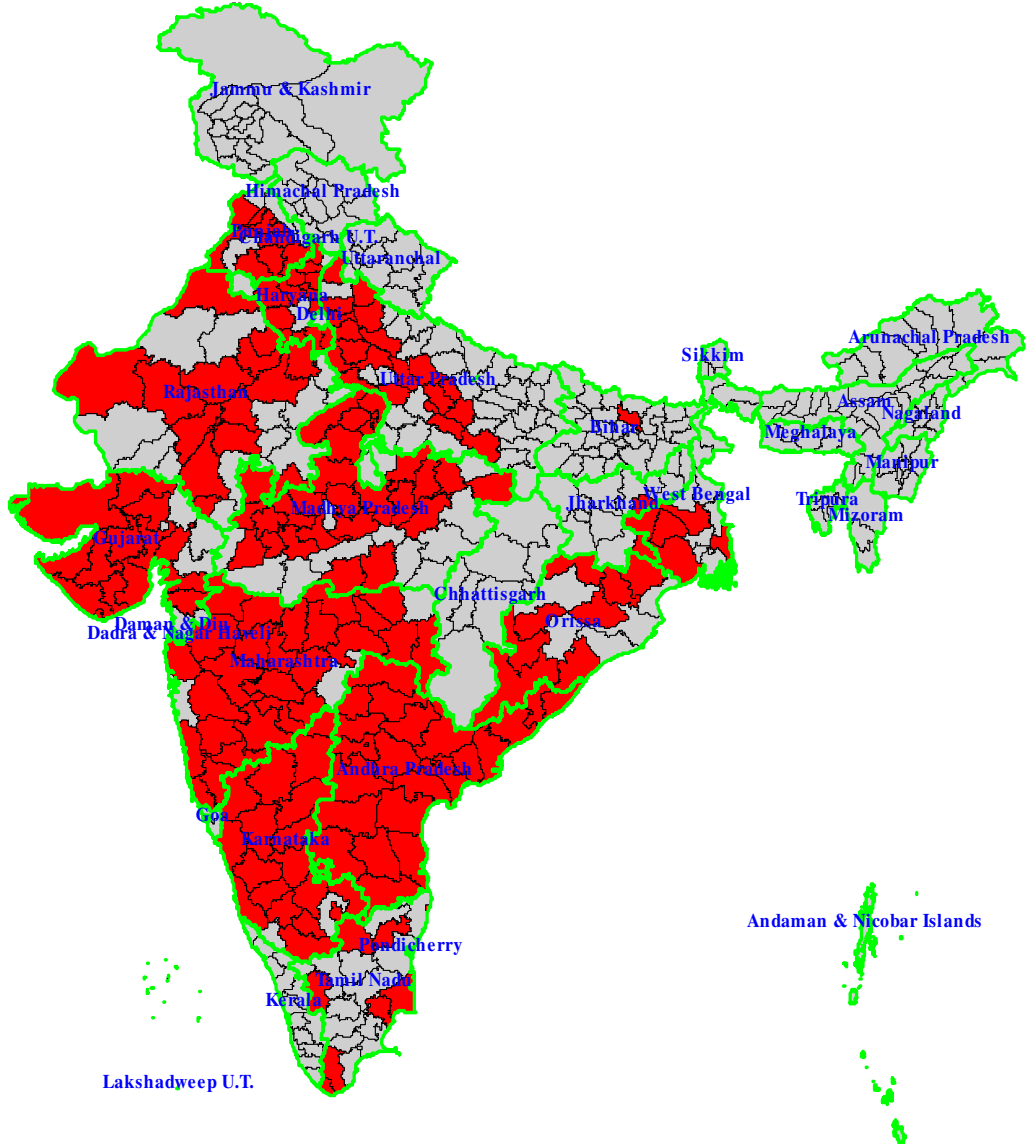


## Provision of drinking water supply in rural areas - 2010

Total no. of habitations	No. of habitations with 100% population coverage	No. of Habitations with population coverage > 0% and < 100%	No. of habitations with 0% population coverage
16,58,323	11,51,272	4,07,617	99,434
<b>100%</b>	<b>69.42%</b>	<b>24.58%</b>	<b>6.01%</b>



# Widespread slippage - 2000





## **Water quality monitoring & surveillance capacity building**

- Aiming to prepare community and GPs to take over the full responsibility of managing drinking water – focus on water quality issue
- 5 persons to be trained in each Gram Panchayats
- Water testing kits to be made available
- Encouraged to carry out regular indicative tests
- In case of contamination, samples to be taken to Labs for confirmatory tests
- Remedial action to be initiated by the community as well as public health authorities.



## WQM&S campaign – impact study

Coverage	Pre-Monsoon	Post-Monsoon	After the campaign
Number of districts	23	26	14
Number of Blocks	184	225	110
Number of Villages	7,973	12,135	<b>6,499</b>
Number of samples	17,961	32,074	21,612
Chemically fit samples	13,602 (75%)	23,943 (74%)	17,992 (83%)
Bacteriologically fit samples	9,228 (51%)	22,936 <b>(72.5%)</b>	20,960 <b>(97%)</b>

## Change in number of WQ affected habitations

- **Arsenic**
  - In 2006 : 7,067 habitations of 6 States
  - In 2009 : 10,004 habitations from 14 States
- **Fluoride**
  - In 2006 : 29,030 habitations from 17 States
  - In 2009 : 33,071 habitations from 19 States
- **Iron**
  - In 2006 : 1,04,477 habitations from 24 States
  - In 2009 : 1,01,845 habitations from 23 States
- **Salinity**
  - In 2006 : 12,425 habitations from 14 States
  - In 2009 : 32,497 habitations from 17 States
- **Nitrate**
  - In 2006 : 19,387 habitations from 10 States
  - In 2009 : 2,571 habitations from 9 States



## **Water quality M&S – future scenario**

- States to improve performance/ data entry;
- Inform NRHM about the situation and link it to IDSP – regular monitoring & identification of ‘epidemic hot spots’;
- Concentrate on Diarrhoea and other disease-prone areas on water quality testing and remedial action;
- Mobilizing communities for improving sanitation to prevent bacteriological contamination;
- States to notify ‘water quality standards’ as enforceable legal instrument under Public Health Act;
- NABL accreditation of District level WQ Laboratories;
- Protocol in case of habitations reporting chemical contaminants viz. Arsenic; and
- Convergence with MoH&FW and MoA for nutritional intervention.



# Sector scenario

- Drinking water – infrastructure or a basic ‘service’;
- Monopolistic situation in the sector – PHEDs;
- In the absence of reliable supply of safe drinking water, people making their own arrangements;
- Is there demand for and use of new technology?
- Inherent systemic flaws – environment not conducive for usage of new technology;
- Bacteriological contamination – very high;
- Chemical contamination : 1.44 lakh habitations but tests shows higher numbers;
- Arsenic, Fluoride, Nitrate, salinity and Iron – major chemical contaminants
- Other heavy metals, pesticides, etc. – major concern
- O&M maintenance failure – very high slippage



# Why this workshop

- Are we satisfied with our achievements? Are people satisfied with the kind of services they get?
- Are we able to fulfill people's expectations?
- What kind of role technology is going to play in solving the water problem?
- What kind of demand for technology is there?
- How to make PHEDs more receptive to new technology?
- Service providers/ Institutional needs v/s domestic needs?
- Traditional technological options v/s best technology v/s appropriate technology!
- Conducive environment for development and transfer of new technology.

# Safe water - corrective actions



# Roof-top rain water harvesting



# Reaching out to the Community (IEC)



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# Village-level leaderships







## **NRDWP** – enabling environment

- NRDWP funding enhanced - Rs. 9,000 crore in 2010-11;
- Upto 65% State's allocation for coverage
- 20% NRDWP allocation for sustainability as 100% grant;
- 5% NRDWP funds for support activities as 100% grant
  - SWSM, DWSM to be made truly functional;
  - Setting up of Water & Sanitation Support Organization & CCDU;
  - Setting up of Block level WQ testing laboratories and WQM&S;
  - Block Resource Centres (BRC) for training & capacity building
- GPs/ VWSCs managing in-village water supply – 10% NRDWP funds as incentive, another 10% for O&M;
- State-level Technical Support Agencies (TSA) for assistance;
- Massive IEC campaign to bridge the knowledge & info gaps;
- Online IMIS for monitoring, planning and transparency;

# Some important initiatives

- Strengthening of water quality testing regime
  - Focus on Water Quality Monitoring & Surveillance;
  - Water quality testing laboratories upto sub-division level;
- R&D – thrust areas identified & new R&D projects;
- Setting up of National Resource Centre (NRCs);
- Preparation of HGM Maps and training;
- awareness and IEC campaign;
- Setting up of ‘Professor Chairs’;
- National Key Resource Centres (KRCs);
- Training Calendar 2010-11;
- Block Resource Centres (BRCs);
- TNAs – Training & Capacity Development Plan;
- Integrated Management Information System & its impact ;
- Monitoring & evaluation study;
- Preparation of Strategic Plan of DoDWS;



*Thank you*





## RWS sector – way forward

- Focus on service delivery – household piped water supply, 24-hours service, its impact on health, time, economy, etc.
- Public Health Engineers playing the role of facilitator - focus on capacity building and empowerment local community;
- In-village management by Village Panchayats/ VWSCs, bulk supply, if required, by the Government agencies/ utilities;
- Move from over-dependence on single source to multiple sources;
- Sustainability of existing sources & systems - Reviving traditional water bodies, RWH, recharge, dispersed storage reservoirs, etc.;
- Water Quality Monitoring & Surveillance by the village community;
- Link to sanitation, clean village, solid & liquid waste management - convergence of efforts viz. NREGA, TSC, NRHM,
- Moving up the **drinking water ladder** - from hand pumps to public taps to household water connections;