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 Assessing the Current Situation - Advice [message #46982]

Nitya Jacob

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Environment

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Solution Exchange for the Water Community Consolidated Reply

Query: Preparation of Strategic Plan for Drinking Water by DDWS: Assessing the Current Situation - Advice

Compiled by [Nitya Jacob](#), Resource Person and [Sunetra Lala](#), Research Associate

Issue Date: 25 August 2010

From [Bharat Lal](#), Department of Drinking Water and Sanitation, Ministry of Rural Development, Government of India, New Delhi

Posted 1 July 2010

This is the second in the series of three queries the Department of Drinking Water and Sanitation (DDWS), Ministry of Rural Development, Government of India, is posing to the Community to seek inputs for the strategic plan for rural drinking water up to the year 2022. The first query dealt with the aspirations, purposes and functions of DDWS and we thank you all for the responses. As mentioned earlier, the focus now is on a community-led flexible approach that accommodates the local geo-hydrological, climate and cultural variations. There is a strong emphasis on community mobilization for creating a demand for better water supply. This is carried forward in the proposed new strategic plan for drinking water.

The process of preparing the plan has been divided into four stages – defining the aspirations, assessing the situation, developing the strategy and plan implementation. **This query addresses the second stage – assessing the situation.** Accordingly, we are seeking inputs from you on the current

situation. The discussion paper (<ftp://203.124.149.174/public/wes/cr/res-04061001.pdf> (PDF, 1.6 Mb)) provides the relevant details from Page 3 onwards and the second row of the template (<ftp://203.124.149.174/public/wes/cr/res-04061002.pdf> (PDF, 44 Kb)) gives the approach we are following. Kindly respond to the questions below:

1. What are the external challenges in achieving these goals based on field experiences?
2. Who are the key stakeholders in the field of rural drinking water and on what terms can the Department engage with them, based on comparative strengths?
3. What is the current status of coverage of safe and adequate drinking water in rural areas?

Responses were received, with thanks, from

1. [Kalyan Paul](#), Pan Himalayan Grassroots Development Foundation, Ranikhet
2. [Hirudia Raj](#), Consultant – Water, Hyderabad
3. [Chandi Charan Dey](#), Ramakrishna Mission Lok Shiksha Parishad, Narendrapur, West Bengal
4. [S. Laxman Rao](#), Centre for Management and Social Research (CMSR), Hyderabad
5. [Dinesh Kumar](#), Institute for Resource Analysis and Policy, Hyderabad
6. [Mohanasundar Radhakrishnan](#), Arghyam, Bangalore
7. [Venkatesh. P](#), Bangalore Medical College, Bangalore
8. [Raktim Mukhopadhyay](#), Bangiya Unnayan Parishad, Kolkata
9. [V. A. Raveendran](#), CMG - TWAD Board, Chennai
10. [Marina Nandyal](#), WaterHealth India, Hyderabad
11. [Puran Singh Yadav](#), Haryana Institute of Rural Development, Karnal
12. [Binu K Puram](#), GoI-UNDP DRR Programme, Kerala
13. [Amit Kumar Singh](#), Public Health Engineering Department, Karnal
14. [Nitya Jacob](#), United Nations Children's Fund (UNICEF), New Delhi
15. [Rajesh Shah](#), Peer Water Exchange, Bangalore
16. [Rema Saraswathy](#), Institute of Sustainable Development, Chennai
17. [Arunabha Majumder](#), Jadavpur University, Kolkata
18. [Veena Khanduri](#), India Water Partnership, New Delhi

Further contributions are welcome!

[Summary of Responses](#)

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Summary of Responses

In the second discussion on Preparation of a Strategic Plan for Drinking Water from the Department of Drinking Water and Sanitation (DDWS), Ministry of Rural Development, Government of India, members highlighted the external challenges in achieving the goal of providing drinking water. These relate to institutional and planning issues, source protection, water quality and behaviour change. The local communities and their elected representatives in the panchayats are the key stakeholders in provisioning drinking water.

Suggestions on engaging with them included a combination of capacity building, financial support and including them in the planning process. Specifically, community members need support – training and money – to maintain their water sources such as handpumps to reduce their downtime. There were only a few comments on the current status of water supply since DDWS has a comprehensive online management information system.

The specific suggestions are given below:

4. **What are the external challenges in achieving these goals based on field experiences?**
 - a. Institutional and planning challenges:
 1. Village institutions have a small role in managing local water resources even though water is a state

subject

2. There is a lack of community ownership and no recognition of the role of women in planning
 3. Pollution control boards are ineffective in managing pollution from industrial and urban sources
 4. Ineffective revenue collection
 5. Plans are based on outdated population data and do not take into account population growth
- b. Source-related challenges
1. Excessive dependence on tubewells, especially in arid areas, lead to rapid depletion of groundwater and destruction of sources
 2. There is a shortage of drinking quality water while people use polluted water for other purposes
 3. Village distribution systems are poorly maintained – tanks are seldom cleaned and there is almost no chlorination
 4. Overdrawal of water from all sources especially for agriculture and more recently by industry
 5. Poor response to breakdowns and O&M of village systems is problematic on account of a lack of funds and manpower
 6. Traditional sources are being neglected and are dying out
- c. Water quality
1. Poor water quality due to pollution by agriculture, industrial and domestic sources and testing facilities are few and far between
 2. Water quality affected by other causes – arsenic, fluoride and salinity
 3. Water quality laboratories are few and far apart
- d. Change behaviour to manage demand especially from the farmers, and include cost sharing in government schemes. Where there is an assured supply, people waste water
- 5. Who are the key stakeholders in the field of rural drinking water and on what terms can the Department engage with them, based on comparative strengths?**
- a. Local communities are the key stakeholders as to manage their own water resources, planning and O&M. They require training and awareness about water supply schemes and facilities. This also entails a change in the attitude of officials, e.g., the Change Management Group of Engineers of the Tamil Nadu Water Supply and Drainage Board
 - b. Panchayat system. The district panchayat should manage the district water and sanitation mission while the gram panchayat should manage VWSCs. The aim of planning should be to provide piped household water connection as people have the highest willingness to pay for such systems. Water planning has to include watershed management including tree plantation and checking soil erosion. It has to take future population growth into account. GPs have to manage local and traditional water sources such as village ponds and their catchments by banning defecation and entry of animals
 - c. Community-based organisations such as SHGs, youth groups, farmers' associations have to be involved in water management. They require training on O&M of handpumps, water quality testing or sample collection, use of GPS, exposure visits and water treatment. Water quality testing results should be made public. They can manage decentralised and cost-effective water treatment plants
 - d. Central and state pollution control boards have to control pollution from industrial and municipal sources. Municipalities must have adequate water treatment facilities
 - e. Industries can be drawn into support rainwater harvesting programmes
- 6. What is the current status of coverage of safe and adequate drinking water in rural areas?**
- a. Declassify information on water resources
 - b. Even in operational piped water supply systems, there is no regular cleaning of over-head tanks and chlorination
 - c. Low coverage in remote/tribal areas; excluded groups still left out and load on women remains high even in areas where there is supply since they have to queue up for water and carry it from source to home

Related Resources

Recommended Documentation

From [Sunetra Lala](#), Research Associate

Current Status of Water Crisis and Measure to Mitigate: 5-Fold Path Mission

Document; by Pathak R Kripal. National Horticulture Mission; New Delhi;

Available at <ftp://ftp.solutionexchange.net.in/public/wes/cr/res-23041005.doc> (DOC; Size: 100KB)

Describes how ash from agnihotras has been used to improve groundwater quality, providing an alternate

way of doing so

Economic Losses for Urban Water Scarcity in California

Paper; by Marion W. Jenkins, Jay R. Lund, and Richard E. Howitt; University of California, Davis, California, USA; mwjenkins@ucdavis.edu;

Available at <http://cee.engr.ucdavis.edu/faculty/lund/papers/CalUrbanWaterScarcity.pdf> (PDF; Size: 150KB)

It demonstrates the practicality of developing reasonable economic loss functions for urban water supply studies, rather than conventional notions of water supply

City Development Plan - City Water Supply System

Book; by Department of Urban Development, Government of Delhi; 2006;

Available at http://www.ccs.in/ccsindia/pdf/Ch08_Water%20Supply.pdf (PDF; Size: 750KB)

The book presents an overview of the Delhi National Capital Territory development plan for the water supply sector

Recommended Organizations and Programmes

Swajaldhara, New Delhi(from [Chandi Charan Dey](#), Ramakrishna Mission Lok Shiksha Parishad, Narendrapur, West Bengal)

Ministry of Rural Development, Government of India, 9th Floor, Paryavarn Bhawan, CGO Complex, Lodhi Road, New Delhi 110003; Tel: 91-11-24361043; Fax: 91-11-24364113 jstm@water.nic.in;

<http://www.ddws.nic.in/swajaldhara.htm>

Drinking water supply scheme, which aims at decentralised implementation of drinking water projects, based on empowerment of villagers to ensure their full participation

National Rural Employment Guarantee Scheme (NREGS), New Delhi(from [Arunabha Majumder](#), Jadavpur University, Kolkata)

Ministry of Rural Development, Krishi Bhawan, New Delhi 110001; Tel: 91-11-23063581,23034922; Fax: 23385466; singhrp@sansad.nic.in; <http://nrega.nic.in/guidelines.htm>

Provides for 100 days of work to one person from each family below the poverty line, works taken up under the scheme include constructing rainwater harvesting structures

National Bank for Agriculture and Rural Development (NABARD), Maharashtra(from [Puran Singh Yadav](#), Haryana Institute of Rural Development, Karnal)

Plot No C 24, G Block, Bandra-Kurla Complex, Bandra (E), Mumbai 400051 Maharashtra; Tel: 91-22-26530094; Fax: 91-22-26530060; contact@nabard.org; <http://www.nabard.org>

Has a national scheme for the rehabilitation of dug-wells across India for individual farmers where it provides financial assistance

Central Pollution Control Board (CPCB), New Delhi(from [Nitya Jacob](#), United Nations Children's Fund (UNICEF), New Delhi)

A-2, W-3, Curzon Road Barracks, Kasturba Gandhi Marg, New Delhi 110001; Tel: 91-11-23385620; Fax: 91-11-23388310; msml-cgwb@nic.in;

http://cgwb.gov.in/GroundWater/Hydrogeological_Surveys.htm

Works for prevention and control of pollution of water bodies, land and the environment by enforcing pollution control legislations

BAIF-Institute for Rural Development-Karnataka (BIRD-K), Karnataka(from [Venkatesh. P.](#), Bangalore Medical College, Bangalore)

P. B. No.3 'Kamdhenu', Sharda nagar, Tiptur 572202, Karnataka; Tel: 91-8134-250658, 250659; Fax: 91-8134-251337; birdktp@gmail.com; www.birdk.org.in

BIRD-K has developed and installed rainwater harvesting systems for individual households in fluoride-affected areas of Karnataka

Institute for Sustainable Development, Tamil Nadu(from [Rema Saraswathy](#))

lots S1-S2, Air Force Nagar, TSP Road, Veerapuram, Chennai 600055, Tamil Nadu; Tel: 91-44-26840209; info@isd.org.in; <http://www.isd.org.in/index.htm>

Has been working in the water sector for the past six years taking up research, action research and

community participatory models in Tamil Nadu

From [Veena Khanduri](#), India Water Partnership, New Delhi

India Water Partnership, New Delhi

4, Institutional Area, Vasant Kunj, New Delhi 110070; Tel: 91-11-26891111; Fax: 91-11-26122448; iwpneer@gmail.com; <http://cwp-india.org/default.asp>

Works to support action on sustainable and integrated development and management of water resources at national, regional river basin/sub-basin and local levels in India

Development Alternatives, New Delhi

111/9-Z, Kishangarh, Vasant Kunj, New Delhi 110070; Tel: 91-11-26134103; Fax: 91-11-26130817; tara@deval.org; www.deval.org

Promotes sustainable national development and livelihoods and provides support for developing and installing water treatment plants

From [Sunetra Lala](#), Research Associate

Administrative Staff College of India (ASCI), Andhra Pradesh

Bella Vista, Raj Bhavan Road, Khairatabad, Hyderabad 500082; Tel: 91-40-66533000; Fax: 91-40-23312954; <http://www.asci.org.in/> Contact S. K. Rao; Director General; skrao@asci.org.in

Has pioneered management education in India, to synthesise managerial theory and practice, and is looking at issues of water supply at the policy level

World Bank, New Delhi

70 Lodi Estate, New Delhi 110003; Tel: 91-11-24617241; Fax: 91-11-24619393;

smozumder@worldbank.org; <http://www.worldbank.org.in/WBSITE/EXTERNAL/COUNTRIES/>

Source of financial assistance to developing countries, including India and has evolved participatory approaches for water management in both rural and urban areas

PricewaterhouseCoopers, Maharashtra

PwC House, Plot No. 18 A, Guru Nanak Road (Station Road), Bandar, Mumbai 400 028; Tel: 91-22-66891000; Fax: 91-22-66891888; <http://www.pwc.com/in/en/index.jhtml>

PWC works with the government utilities to improve their efficiency and effectiveness in the way they deliver citizen-centric services, including water supplies

Related Consolidated Replies

Preparation of Strategic Plan for Drinking Water by DDWS, Bharat Lal, Department of Drinking Water and Sanitation, Ministry of Rural Development, Government of India, New Delhi (Advice), . Water Community, Solution Exchange India,

Issued 17/06/2010. Available at <ftp://ftp.solutionexchange.net.in/public/wes/cr/cr-se-wes-04061002.pdf> (PDF,Size: 429 KB)

Seeks inputs on the required goals and aspirations for the DWS for the preparation of the strategic plan for rural drinking water

Responses in Full

[Kalyan Paul](#), Pan Himalayan Grassroots Development Foundation, Ranikhet

For all the three queries, the focus ought to be forests. Lack of forest cover is the primary challenge for sustainable supplies of water. The forest department staff is the key stakeholder and the department of water resources ought to engage with them in a significant manner on an urgent basis. Most water supply schemes are primarily in a poor state due to poor recharge of water resources, which is due to degradation and over-exploitation of forest resources. Yet, another reason is that traditional systems have been abandoned without building capacities of local communities to actually manage water supply systems. For this, the line departments in the states need to re-orient themselves and enable

communities to be the custodians of water supply systems. It may be a good idea to re-visit some of the water sector reform programmes which were initiated in the last decade and draw appropriate lessons.

Hirudia Raj, Consultant – Water, Hyderabad

Presently most of the villages in the rural areas are provided with piped water supply systems, and in many villages the houses are connected with individual pipe connections and some with public stand posts. Based on my experience the key stakeholders are the Sarpanch, women SHG leaders and youth/school dropouts. For maintenance of the PWS not many skills are required, except for orientation and awareness building.

The major issue in these systems is the quality of water. The RWS may be conducting water quality tests but this information of water quality results are not shared with the stakeholders. My suggestion would be to share the water quality results and establish display boards (with water quality results) at the villages (common sites) and update them regularly. The stakeholders in the villages should be imparted with training on water quality aspects and also water conservation, including source protection. The most important issue is bacteriological contamination - the stakeholders should analyze the sources (causes) of bacteriological contamination and should conduct periodic treatment of the borewell sources.

Chandi Charan Dey, Ramakrishna Mission Lok Shiksha Parishad, Narendrapur, West Bengal

Current statics shows that most of the rural people are getting their drinking water from the spot water sources only. As the country has not been able to provide drinking water and water for other household purpose through piped water supply systems people have to collect water from long distance. As a result they are only collecting 15-20 liters of water for drinking water purpose. Water for other uses like washing of mouth, hands, and bathing are drawn mostly from the contaminated water available nearer to their home.

It is important to provide drinking water and water for other household purposes through piped water supply system. The DDWS should put highest priority to this matter during the strategic planning in rural drinking water supply and a time bound programme for piped water supply in rural India needs to be developed.

If the country is able to supply drinking water through piped water supply then automatically recurring cost towards maintenance of lakhs of spot sources can be reduced. Cost effective and efficient Water Quality Monitoring and Surveillance systems can also be introduced.

When there is piped water supply system in the villages a good number of households will come forward to take household connections sharing the cost of connection and O&M of the system. Through this process some portion of O&M can be realized and cross subsidy will be possible for the poor.

It has also been proven from the Swajaldha experiences that habitation/village based Small Piped Water Supply Systems is the best alternative for sustainable management and operation by the user groups and to develop the ownership of the system. During the preparation of strategic planning this should be prioritized.

S. Laxman Rao, Centre for Management and Social Research (CMSR), Hyderabad

Millions of people living in semi-arid and drought-prone regions of India are hit hardest by water scarcity, especially in summer. In many locations, the common tube well is the only source of water for both humans and livestock when the dug-well and surface water runs dry. But overexploitation of groundwater for irrigation as well as non-agricultural purposes has resulted in competitive sinking of tube wells leading to ever deeper tube wells and plunging water table.

This results in drying up of the common source of water thus forcing people and livestock in many places to access water from a nearby irrigation tube well. In many parts of India's drylands, even the gains achieved by watershed interventions are not accruing to the community, especially to the poor, owing to "water mining" for irrigation purposes. Therefore there is a need to mobilize the community to manage water resources for the common good. Drinking water needs of the community needs to be given top priority. This should be complemented with regulatory policies from the Government that ensure that the common resource is not exploited by better-off farmers at the expense of community interests. Facilitation by civil society organizations would make the initiatives more effective.

[Dinesh Kumar](#), Institute for Resource Analysis and Policy, Hyderabad

[Chandi Charan De's](#) point about providing piped water supply to villages is extremely valuable. As implicitly stated by Mr. De, one big reason why rural people do not show willingness to pay for water supply is that they do not get it at their doorstep, and instead have to invest good amount of time and labour to fetch it from a distant common source (like the stand post). Though they do not pay, the opportunity cost is high.

While it is also true that small-scale systems are easy for community to manage, in most cases (in hard rock regions with low to medium rainfall), they are not viable from the point of view of sustainability of water supply. The schemes based on wells and bore wells become defunct very fast, while local surface sources are difficult to find. This is one main reason why thousands of villages in Saurashtra and Kachchh in Gujarat have gone for long distance regional water supply schemes.

When it comes to managing rural water supplies, there is a huge trade-off between what is physically sustainable, and what is good for local management in many areas.

[Mohanasundar Radhakrishnan](#), Arghyam, Bangalore

One of the main challenges in Rural water systems apart from the water quality issue are the issues related to the Operation and maintenance (O&M) in the long run. In most of the projects funds are not earmarked for the long term operation and maintenance of the systems be it water treatment system or distribution system. It's assumed in most of the cases that the revenue generated locally would take care of the O&M charges. Appropriate financial mechanisms have to be put in place to take care of these O&M issues i.e., the part of the grant or aid or loan is set aside in form of a revolving fund to take care of the O&M expenses. These would make the rural water supply systems sustainable.

[Venkatesh. P](#), Bangalore Medical College, Bangalore

I went through the issue mentioned about people in semi-arid regions where their over-dependence on tubewells has led to water scarcity as well as deeper well digging as an aggressive and competitive way. People who have tubewells that have dried up could explore the method of rain water harvesting as a method to recharge their wells though partially. This is because of my visit to the field areas of Rainwater harvesting of the BAIF Institute of Rural Development Karnataka. Here recently I visited the areas of rainwater harvesting as well as the Aquifer Recharge unit of the lake. It is designed and implemented such that even mild to moderate rain collection in the lake would let the water to percolate through the filter bed and let into the tube well dug up at the core of the structure. Over the long run even with moderate water collection the ground water table could be recharged and ensure the tube wells that are dug up in the periphery of the lake near the dwellings also recharged. This they have achieved with their share of resistance with the Panchayat members as well as the locals. With repeated motivation efforts and debriefing about the activities and fund made available (although released at the end of the completion with obvious inspection and confirmation to the expected norms) coupled with the problem of flourosis in Upper Taluks of Tumkur District of Karnataka, made people resort to this method. Now people have slowly changed to this method. Also the fund provision for the BPL families is higher compared to that provided to APL families (Rs.16000 vs Rs.12000).

This method has to be customised according to the geographic situation and water table and any other problems coupled with the PRI system existing there and CBOs working in those areas. So this method could be given a thought worth off.

[Raktim Mukhopadhyay](#), Bangiya Unnayan Parishad, Kolkata

To assess the external challenges in achieving the goals we should first analyse the current situation. Basic challenge is to provide safe drinking water to each and every villager of our country. Not only the women are fetching necessary drinking water from far off places and in limited quantities but also the water is usually contaminated. Naturally it bring serious health hazard for the family members, particularly for aged and children. Besides, the availability of water solely depend on the season. In states like Punjab, Rajasthan, Gujarat, etc., water is very scarce most of the year. Besides, in some areas where drinking water is supplied from tubewells, it is also not safe because in most of the villages tubewells are not properly bored with adequately length of piping or sited scientifically. In some of the areas arsenic contamination is a major problem. These external challenges should be properly dealt with.

It is obvious and natural that women are the key stakeholders in the field of rural drinking water. To involve and engage them as a potential force for implementing the plan for providing safe drinking water to the rural people the Department should contact and co-ordinate with rural Self Help Groups, if already existing in the areas, or help the women form SHGs with the active help of a good and transparent local NGO. These SHGs may be given charge of boring the tubewells with the help of local self government bodies and NGOs and their maintenance. This was partially but successfully experimented by NGOs in different parts of our country during past years.

Current status of coverage can be assessed best by the Department itself by collecting and analyzing the data from the gram panchayat level right up to the state government level. NGOs can be involved in this data analysis.

[V. A. Raveendran](#), CMG - TWAD Board, Chennai

Water management by the local community members with the help of the technocrats in water departments is the need of the hour. Though the departments are striving hard to provide water supply, there is little by way of water conservation compared to the extraction. The management practices and the relationship between water and the humankind have to be developed immediately. The blend of technology along with the native and traditional wisdom only can give right solutions.

[Marina Nandyal](#), WaterHealth India, Hyderabad

1. What are the external challenges in achieving these goals based on field experiences?

We are aware that it is every ones right to have safe drinking water to protect their health. Since rural water supply and distribution is not fully equipped in our country to provide safe drinking water to the rural area, we many need to do the situation analysis incorporating finance burden to provide infrastructure development and its maintenance to provide safe water with the constant quality in nature. This may take long time to achieve this; hence it is time to plan for decentralized water purification systems (plants), which can cater the drinking water needs of the rural people. The rural water management starts from the source water to the water distribution to the consumers. DDWS can plan for implementing community water purification systems, which can exclusively work for the rural areas to provide safe drinking water. Type of water purification varies based on the contamination level in that particular area. These type systems can be installed and operated on boot basis and also with some capital support of Governments/ NGOs/ donors etc. These plants can be operated for 8 -10 yrs by private agents/ investors/ entrepreneurs and then can be handover to Panchayat for their own maintenance. Community can collect the water at the water purification center by paying some user charges.

2. Who are the key stakeholders in the field of rural drinking water and on what terms can the Department engage with them, based on comparative strengths?

Key stakeholders are the rural community (Panchayat), agency who are installing and running the system (technocrats) and capital investors etc. The Department has to identify the agencies who have the capability to set up the water purification systems and operate the system to meet the drinking water standards with the technology to address the contamination by using the raw water connection, electricity connection and land provided by the Panchyat.

3. What is the current status of coverage of safe and adequate drinking water in rural areas?

Current status of coverage can be assessed by the Department itself by a detailed survey collecting and analyzing the data from the gram panchayat level right up to the state government level. Gap between the water source availability and drinking water availability along with the community health status are to be evaluated to take the right decision.

Puran Singh Yadav, Haryana Institute of Rural Development, Karnal

Millions are being pumped in by the Central as well as state year after year for providing safe drinking (piped) water to its rural as well as urban population. Despite best efforts made towards creating sustainable water supply systems, success has been eluding. Though there are few success stories. Needless to mention that with the increasing biotic pressure, water requirements have also increased manifolds. At the same time wastage of water is also alarming. The potable water flows in the drains through washing, bathing and toilets. Agriculture and industry are also major water consumers. Generally, the water supply systems are based on either canals or tube wells. People fetch water from springs, village ponds, rivers and other sources also.

Challenges

- The local water sources have either become extinct or dried up. The village ponds which used to be the major source of drinking water have become extinct either due to expanding village population or due to their becoming pool of stinking waste water. The fresh water does not flow into the village ponds. Moreover, the village pond lands have been encroached upon by the mighty. The other sources have dried up or water table has gone down due to over exploitation.
- AS per the assessment of NABARD almost all the development blocks in Haryana have come in the category of 'dark' zone. Further ground water exploitation will cause a great damage to the overall water availability.
- On the other hand, where the underground water is not fit for human consumption, these areas are experiencing water logging or soil alkalinity or salinity. The quality of water being supplied is also questionable.
- Presently, no sincere efforts appear to be made by the state government towards sustainability of local water sources. The watershed development schemes under sponsored by Ministry of Rural Development (DDP/IWDP), Ministry of Agriculture and Ministry of Forests have not been in position to contribute much towards water conservation and water management.
- There is no rain water management plan or system in the state despite a number of seasonal rivulets and drains draining from North to South and South to North. The State cannot take to load of 4-5 hours rains as has happened in some parts of the state 6th July, 2010. Few hours rains flood a vast area. Water was seen flowing uncontrollably damaging the crops. The whole rain water going waste, which could have been recharged the underground aquifers.
- So, the conservation of existing water resource, reducing the exploitation of underground water and management of rain water are the big challenges before the Department. Increasing exploitation of water by the industries is also a big challenge.
- Presently, no efforts seem to have been made towards sustainability except channelizing scarce river water through pipelines to the villages.
- In my opinion, the Public Health Engineering Department of the country should be named as Pipes Purchasing Department where major funds are used for this purpose only. Changing the name of water supply scheme from ARWSP to NRDWP is not going to make much impact until the sincere efforts are made towards recharging of underground aquifers or management of rain water.

Key Stakeholders

- We need to identify the water guzzlers. These are industries, corporate sector, agriculture and toilets especially in the urban areas.

- The Key stakeholders are Panchayati Raj Institutions especially the Gram Panchayats, rural community, PHED, Agriculture Department, Rural Development Department, Industrial houses and corporate sector. The urban sector also cannot be separated from rural water supply systems as the water supply emanates from the rural areas.
- The Panchayati Raj Institutions and rural communities should be involved fully in water management systems. The village ponds should be renovated/ remodeled to meet the current needs. New ponds should be dug for harvesting rain water. There should be no open defecation in the catchment area these ponds.
- Only treated waste water through community soakage pits should be allowed to enter these ponds.
- Every rural household should essentially have individual household soakage pit. Roof rain water harvesting should be popularised in the villages.
- All the government/ public buildings including school buildings should install roof rain water harvesting system. Old wells should be used for recharging the underground aquifers during rains. Rain fed cropping pattern should be promoted in deficit areas.
- Village communities will have to be kept on the forefront like Ralegan Siddhi, Hiwre Bazar, Raj Samdhiala and Saurashtra Region of Gujarat as only collective community behaviour can create sustainability and that too women.
- There is also urgent need to think of community awards and community penalty (on Panchayats) for creating sustainable water supply systems and wastage of water resource.
- Community quantity and quality monitoring and establishing helpline will go a long way in improving the
- Industrial houses and corporate sector should be engaged in financing the rain water management programmes under CSR. There should be cess on underground water utilization on these houses. All industries should install roof rain water harvesting system or their use.

Current Status of coverage of adequate and safe drinking water

- Current status of supply of safe drinking water differs from area to area. May be good in surplus areas where it is canal based or water table is not so deep. In my native village (and have seen in few more villages) few private water supply systems have been installed on payment basis as the Government water supply is not only inadequate but also erratic. It does not reach in most of the households. These private water suppliers have installed deep bore wells in their fields and have laid underground HDPE pipe lines in the village population connecting individual customers. People depend on private water supply despite its poor quality.
- In Haryana, individual households were given water connections under Indira Gandhi Village Panchayat Yojna and free of cost to SC families along with a water storage tank for storage of water; it has led to further wastage of potable water.

Binu K Puram, GoI-UNDP DRR Programme, Kerala

I would like to share some points in this discussion. Community based rural water supply and sanitation schemes are very viable and accessible. At the same time some of the following points should be considered seriously to earmark some provisions in the plans/projects.

- Piped water supply is the best option but we will have to be very careful about abandoning natural sources like wells, ponds and lakes, etc due to the availability of water in the house premises. In several occasions people tend to fill water from the wells and natural water sources.
- There needs to be adequate provision for water recharging measures and it should be mandatory and linked with the availability of land for housing.
- Alternate sources for each scheme should be provided if the scheme is dependent on open wells or bore wells.
- Natural sources in the villages should be protected with reinforced structures and be free from environmental pollution.
- Adequate training for maintaining distribution lines and other structures has to be provided and conducted periodically for new pump operators.
- There needs to be some legal measures to control and monitor the CWSS by local administrations like GPs.
- Monetary rewards should be awarded to those who are adopting recharge measures, minimizing water usage, adopting good practices, etc
- A technical team in the GP level needs to be constituted with financial provisions to maintain the water supply schemes.
- Water quality tests by external agencies should be carried out periodically.
- Stringent actions should be taken against tariff defaulters and political will should not be a constraint for these actions.

- Last but not the least consumers meetings should be convened periodically to discuss the positive and negative aspects of the scheme.

Amit Kumar Singh, Public Health Engineering Department, Karnal

The Government of India is laying great emphasis on safe drinking water supply to every citizen and lots of funds are earmarked for this programme every year. Despite many sincere efforts the goal is not being achieved on the grounds as the main emphasis of water supply departments is primarily to utilize the funds. Many drinking water supplies based on canal water are not being planned properly and they have become useless in the absence of water because they are constructed far from the canal systems and the canal water never reach the tanks meant for water works.

Water connections with storage tanks were given to many households in the rural areas in Haryana but drinking water is still not available to many of them because of wastage of water by villagers. The mind set of people should be changed by NGOs. In my opinion the wastage of water can be prevented by linking it to some faith based practices and they should be displayed in every village.

Nitya Jacob, United Nations Children's Fund (UNICEF), New Delhi

The drinking water sector faces two sets of challenges. The first set includes supply-related issues of coverage, sourcing potable and providing physical infrastructure. Increasingly, the usual solution of drilling a tubewell or handpump is becoming untenable because groundwater is simply drying up or is so polluted (with agricultural residue, fluorides, and arsenic, other salts or industrial waste) as to be undrinkable without treatment. Treatment is expensive, more so when the systems are small, for removing chemical impurities. But the problem is less of money and more of trained personnel, power and chemicals to run the treatment plants properly. Even surface water sources are polluted. The Central Pollution Control Board, that tracks water pollution, says organic and bacterial contamination continues to be critical in most water bodies because of the discharge of untreated wastewater from cities.

The challenges here are pollution of groundwater and surface water from multiple sources. Nationally, the installed capacity for waste water treatment is adequate to treat only 23% of the total waste water generated, assuming the infrastructure works. Another challenge, therefore, is ensuring the waste water treatment infrastructure is adequate, operational and treats the water to the correct level. Adequately treated water can be let into surface water bodies, including rivers, for further bio-remediation through natural processes and this will also help augment groundwater reserves. Tertiary treatment, though expensive, can produce water pure enough for drinking that can be injected directly into aquifers.

The solutions here are source substitution through rainwater harvesting and water treatment. There are several ways, documented on the Water Community, of using harvested rainwater, for drinking that depend on local factors. Most parts of India have a rich tradition of rainwater harvesting for drinking and agriculture. There are also many methods of water treatment that are not very expensive and can produce water that is good enough for agriculture, the major user of groundwater and one of the main sources of pollution.

Rainwater harvesting -

1. In areas of heavy rainfall, recharge aquifers and shallow wells with rainwater harvested from rooftops. Make a sand filter to remove any impurities and direct the flow into the well or borewell drilled for recharging the aquifer.
2. The same principle can be used to fill surface reservoirs with rainwater for drinking, farming or any other purpose. Depending on the use and location, the reservoir can be lined or unlined. If the purpose is to keep water on the surface, the reservoir can be located in an area where the soil is clayey so water infiltration is low. It can also be located in a rocky area so again seepage is low. However, these options will not work for aquifer recharge.
3. Augment local storage such as village ponds. Nearly all villages in India have some sort of surface storage and these have to be preserved, deepened and strengthened. They are ideal for storing rainwater for later use. The

resultant benefits are higher soil moisture, water in the wells/handpumps and enough water for animals. But they and their catchments need to be cleared of encroachments and sewage flowing into them has to be diverted.

Breakdowns are another reason the infrastructure fails. The response time for fix a handpump in most rural areas is several days at best and never at worst. I saw a village in East Singhbhum, Jharkhand, that had six handpumps nicely plotted on a village map. Two had been out of order for months and people used one of the village wells for drinking water without any treatment. There were no cesspools around the well, the villagers claimed to have tested the water for faecal contamination and found it clean.

The challenge is to ensure faults are fixed within a short time and the water quality is tested regularly. If any contamination is found, the authorities have to take immediate action.

However, there is a simple solution to centralized action. In West Medinipur, Bengal, there are women's groups trained to fix handpumps, take water samples for testing and also take remedial action if the source has any sort of contamination.

In all the cases where problems of drinking water supply and quality have been fixed quickly, it is the local people who have taken the initiative. They are thus the main stakeholders. They need adequate training in operation and maintenance, water testing (collect samples and take them to the nearest water testing laboratory, not use of field test kits owing to their variable quality) and taking remedial action (chlorination or informing people that the water is not fit to drink). The local water supply department or NGO can conduct these trainings. In an ideal situation, the Village Water and Sanitation Committee of the Panchayat should take ownership and do the above functions. But in situations where they do not exist the panchayat can design a group of educated youth to do these things.

Regarding the status of coverage, it is difficult to get country-wide data. However, in each state, there are large NGOs who have worked on drinking water issues for several years or even decades. They can be tasked to sample data from their project areas and this can be compared with the Department's own database. If the two samples vary a recheck can be ordered. This will help to cross-check the Department's data against an independent source. The on-going census should also provide some pointers to drinking water coverage but it will be some time before its results are available.

I would also like to point out the challenge of equal coverage in rural areas. Traditionally excluded groups like lower castes are still deprived of water in village water supply plans and this has to change through a conscious effort at the planning stage. Caste mapping of a village, overlaid with a water supply one, can help. Women have to be part of planning through a separate set of consultations to elicit their concerns as they may not be forthcoming in a large assembly where men are present. The village, block and district water plans have to be gender-transformative rather than merely being gender-sensitive.

[Rajesh Shah](#), Peer Water Exchange, Bangalore

I have two points to make regarding this query.

The first may seem somewhat brusque, but I feel that we need to see the aspirations before assessing the current situation. What are the aspirations? Have they changed with the input provided by this community (and others)? What are the buy-in and the commitment towards the aspirations?

Once we are clear about the aspirations and our resolve, we can decide what situation to assess accurately. We need not fall into mechanically completing the four-step process.

The second point is regarding assessment. With the pressure on the gov't and institutions to show progress, can we really assess the current situation fairly? We all have seen many numbers suddenly jump, for example, when there is a need to show progress towards the MDGs or when a large scheme

is marked complete. And we all know that independent verification is a must and that too a couple of years after the 'completion'. So are we ready to face the truth about the situation?

There are many new ways of assessing any situation if we use the public and remain transparent. From web and SMS technology to crowdsourcing urban and rural students and others (such as this community), we can create a program to get a true handle on any situation (environmental or social | urban or rural).

Rema Saraswathy, Institute of Sustainable Development, Chennai

The Institute of Sustainable Development has been working in water sector for the past six years taking up research, action research and community participatory models in Tamil Nadu State. Based on experience of ISD I try to answer the queries as given below:

What are the external challenges in achieving these goals based on field experiences?

Lack of community participation/ownership is the greatest challenge for sustainable management of safe water for all. The intervention and who, when and how to intervene to bring in community participation are challenges for water service providers. Involving community is not a Herculean task as normally felt, if used the right kind of approach. The experience of ISD has shown that with the locally suitable participatory approach the community ownership for the public good can be built without any financial burden. This necessitates a change in the attitude of officials involved in the water service delivery to accept that it is their responsibility to bring in a change in the community. They are certainly a more enlightened group than the rural community to which they serve. Once the attitudinal change has come with the professionals, they will find the way out to mobilize the community and to bring in their participation as exemplified the Change Management Group of Engineers of TamilNadu Water Supply and Drainage Board. Identifying the local institutions and volunteer groups such as National Service Scheme/ Nuhru Yuvak Kendra/ Students will help in taking up the community mobilization work. The water supply system would become sustainable if there is user community participation and ownership in each and every stage of planning the system.

- Coverage will remain as an issue until and unless the population growth stabilizes, if not declines. Planning should take in to consideration this issue.
- Open well with pumping up facility or stand alone systems like mini power pump for smaller habitations can be technical alternative with options for recharging the sources.
- Use of alternate sources for consumption and for other domestic purposed can help to sustain the potable water resources in a village.
- Maintaining the traditional water resources is essential and has to be done with the involvement of the local community for sustainability.

Who are the key stakeholders in the field of rural drinking water and on what terms can the Department engage with them, based on comparative strengths?

At the level of Village Panchayat, the grass root entity in the RDWS the stake holders can be Panchayat Raj Institution, Village Water Supply Committee, Women Self Help Groups, River/Lake Water User Associations/ Farmer Associations, other Community Based Organisations including Fans Clubs, local resources like technical persons, Institutions and the government machineries. Each of them can play vital role at their level in the rural drinking water sector. All the stake holders have to be involved in planning their RDWS for the village, through the *Gramasabha*. Further, the PRI, VWSC, and WSHGs can be involved in implementation and the operation and maintenance of the RDWS for the village with clearly spelt out responsibilities, the Farmers Associations, Fan Associations, etc can be used for maintaining the water bodies and resources available in the village. All these cannot happen on its-own but necessary capacity building according to the role is essential.

What is the current status of coverage of safe and adequate drinking water in rural areas?

In a piped water supply system, regular cleaning of OHT and the distribution system or chlorination is yet to find place in the village water supply service. When such is the condition of piped water supply, needless to mention about other water supply systems. Promoting point of use water treatment at household (end user) level is one way to promote use of safe water.

[Arunabha Majumder](#), Jadavpur University, Kolkata

Considering safety and security in water supply, groundwater is supposed to be the best source of water in the plains of India. Truly, around 84% rural population utilise groundwater for domestic purposes. But groundwater has been depleted in several places due to overdrawal for irrigation. In some places industries are drawing huge amounts of water causing scarcity of water.

The surface water bodies are getting polluted due to discharges of partially treated or untreated waste water from urban local bodies and industries. Dumping of solid waste and hazardous waste are causing groundwater and surface water pollution. Use of pesticides, insecticides, chemical fertilizers, etc., are deteriorating the water quality of both surface and groundwater sources.

There must be intersectoral co-ordination to minimize the risk and problems as mentioned above. There is no co-ordination between the panchayat department and the public health engineering department for new pond cutting under NREGA to create water sources for domestic uses. A holistic approach needs to be taken for future planning to solve water problem. Effort should be taken to encourage local artisan and local skills to develop indigenous water-purifiers which may be cost-effective and user-friendly.

We must encourage watershed management to address better irrigation and agriculture, increased soil-moisture, greeneries and plantation, livestock maintenance, groundwater recharging through sustainable structures, creation of surface water bodies, livelihood generation etc.

[Veena Khanduri](#), India Water Partnership, New Delhi

India Water Partnership partner NGO, Development Alternatives (DA), New Delhi, is working on Integrated Domestic Water Management (IDWM) in the Bundelkhand region of India. DA recently organized a workshop on IDWM to prepare a framework for IDWM. Based on our field experience in the Bundelkhand region and outcome of the workshop, my views on the external challenges in achieving the goals set by DDWS are as follows:

- For all administrative purposes water falls under the state list. Water resources are controlled and managed by the state government. Village level institutions, which have the largest stake in the use of these resources, play a negligible role in managing them. Policies need to be people-centered and recognize communities as the rightful custodians of water. There is a need to ease exclusive control by the government machinery over water resources so that a paradigm shift to participatory, essentially local management of water resources can be made. Advocacy empowering the affected communities to play an active part in the realization of their rights is required
- State driven Public Health Engineering Departments (PHED) are not in a position to ensure O&M and sustainability of drinking water supply systems and merely transferring these assets to PRIs has no meaning without creating an agency to support them. The 11th Five Year Plan recommends an institutional structure which is responsible to the District PRI for example the District Water and Sanitation Mission (DWSM) should be converted in an agency for implementation and maintenance of water supply and sanitation facilities
- Another concern is the availability of information. Data on water resources are 'classified' and it is ironic that the policy makers do not have any access to them either, let alone the public. It is essential that information is available in the public domain for access to communities. This is critical to the process of planning. Decentralized planning and management of water resources is heralded as the solution to solving the water problems of the country. It is imperative that local basin level information is available for this process to be carried out
- Given the context of the semi-arid region; will essentially be focused on management of natural resources, especially water. The approach needs to be built around community-based water management in terms of source creation; resource management, of both in terms of quantity and quality augmentation measures; enabling and sustaining community institutions to plan, implement and operate a service delivery model of water management. There is a need to integrate the various phases of the water cycle i.e., planning, supply, use, treatment and disposal. This integrated approach will enable communities to manage their water resources in a sustainable manner

- Whenever the community has been involved from planning stage, the programme has always become sustainable. While programmes have elaborate guidelines for community involvement, field level adoption is far from satisfactory. The 73rd and 74th Constitutional Amendments have devolved the water supply responsibility to Panchayati Raj Institutions/local bodies. Due to their inherent weaknesses like funding constraints, low technical ability, etc., the devolution of power is yet to make a desirable impact on the ground. While sporadic success stories are trickling in, this aspect has yet to go a long way. States have to play an important role in placing the Twelfth Finance Commission (TFC) grants devolved to Panchayats and placing the implementation agency at the command of local bodies. The second is simply absent in many states. Involvement of the community in the monitoring of the water supply works should be made a primary condition for release of funds for completed work
- There is a need to focus on changing behaviour patterns. Government schemes will work only if the people it is directed towards understand the importance of the change. Cost sharing by the communities for development activities is a critical pre-requisite for ensuring this long term interest and ownership of the assets created
- Awareness is key to the success of a program. Managing demand can ease the disparity of supply in different areas. There are certain self-limiting policies like demand management (leakages, slabs, pricing and support for the economically weak), destination management and pollution control. In order to universalise access to water for domestic reasons, it needs to be isolated from agriculture and other uses wherever possible. To prevent lowering of water tables due to excessive extraction, cooperation with agricultural users becomes necessary. Communities can decide their water budgets if the allocations of resources are under their consideration.

Many thanks to all who contributed to this query!

If you have further information to share on this topic, please send it to Solution Exchange for the Water Community in India at se-wes@solutionexchange-un.net.in with the subject heading "Re: [se-watr] Query: Preparation of Strategic Plan for Drinking Water by DDWS: Assessing the Current Situation - Advice. Additional Reply."

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[\[se-watr\] CONDOLIDATED REPLY: Preparation of Strategic Plan for Drinking Water by DDWS: Assessing the Current Situation - Advice](#)

By: Nitya Jacob on Wed, 25 August 2010 09:49

Previous [\[se-watr\] QUERY: Improving water and sanitation services in Bihar. Examples, advice. Reply by 6 August, 2010](#)

Next Topic: [Re: \[se-watr\] QUERY: Documentation of good practices under Total Sanitation Campaign - Experiences; Examples](#)

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