



Environment

**Water & Environmental Sanitation Network
(WES-Net India)**



Solution Exchange for WES-Net India Consolidated Reply

Query: UN interventions in the WES Sector, from UNDP, New Delhi (Advice).

**Compiled by Pankaj Kumar S., Resource Person; and Ramya Gopalan, Research Associate
24 July 2006**

**Original Query: Preeti Soni, UNDP, New Delhi
Posted: 10 July 2006**

The UN System in India is in the process of formulating its next UN Development Assistance Framework (UNDAF) for 2008-2012 in consultation with partners and stakeholders. The programs of the UN organizations based in India will design their programs within this framework, which is harmonized with the 11th Five Year Plan.

Following a preliminary situational analysis pertaining to the broad objective of achieving environmental sustainability, the key focus areas for the UN in the specific area of water resource management and environmental sanitation have been identified as follows:

1. Facilitate strengthening of policies and programmes at various levels for pro-poor, equitable and demand-responsive water governance in rural and urban areas.
2. Work closely with various stakeholders to design and implement system-wide communication and advocacy strategies on critical challenges faced in the water resources and environmental sanitation sector.
3. Provide critical management and policy support to improve the implementation and sustainability of national programmes such as Total Sanitation Campaign, Swajaldhara, Accelerated Rural Water Supply Programme, and others. In this regard, multi-stakeholder dialogues may also be organized to bring in different perspectives on the relevant issues.
4. Provide technical guidance and support to programme implementing agencies through a network of technical resource centres and capacity building programmes.
5. Provide support to government in strengthening result based monitoring systems through appropriate tools such as report cards based assessments, social audits, etc. This can be a part of an overall environment assessment report.
6. Experiment with new strategies in selected districts in above areas and, where possible, scale them up.

Members may want to offer comments from two perspectives:

- a) In your view, are the above proposed focus areas both appropriate and strategic for UN intervention, or are there alternative areas we should be investigating?
 - b) Can members point the Working Group to resources and experiences we should explore when taking up any of these initiatives?
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Responses received with thanks from:

1. [Meenakshisundaram](#), National Institute of Advanced Studies, Bangalore
2. [Bharati Joshi](#), Ashoka-Innovators for the Public, Jaipur
3. [Ross Nickson](#), United Nations Children's Fund (UNICEF) Kolkata
4. [Ashok Kumar](#), School of Planning and Architecture, New Delhi
5. [Faiz Ullah Khan](#), Jamia Millia Islamia (JMI), New Delhi
6. [N. K. Purohit](#), RCPE, Jaipur
7. [Ravi Kant Sinha](#), Drinking Water Supply, Ministry of Rural Development
8. [Arunabha Majumder](#), AIIPH, Kolkata
9. [S. Ramesh Sakthivel](#), WES-Net India, New Delhi
10. [Divya Sehgal](#), Freelancer-Environmental Issues, New Delhi
11. [Shital Lodhia](#), Centre for Development Alternatives, Ahmedabad
12. [K. A. S. Mani](#), APFAMGS Project, Hyderabad
13. [Jyotsna Bapat](#), Independent Consultant, New Delhi
14. [Ranjit Kumar Maiti](#), Panchayat & Rural Development Department, West Bengal
15. [Rahul Banerjee](#), Aarohini Trust, Indore
16. [V. Kurian Baby](#), Socio-Economic Unit Foundation, Trivandrum
17. [Arumugam Kalimuthu](#), WES-Net India Core Group, New Delhi
18. [Arun Dobhal](#), Swajal Project, Dehradun
19. [Suhas Gogate](#), ION Exchange(India) Ltd., Maharashtra
20. [Hirenkumar Rajendrabhai Patel](#), PRAVAH, Ahmedabad
21. [Amitava Basu Sarkar](#), Himalayan Institute Hospital Trust, Dehradun
22. [Bhawna Vajpai](#), Water and Sanitation Consultant, New Delhi
23. [K N Vajpai](#), TNS India, New Delhi
24. [Ajit Seshadri](#), Vigyan Vijay Foundation, New Delhi

Further contributions are welcome!

Summary of Responses

The United Nations System in India is in the process of formulating its next UN Development Assistance Framework (UNDAF) for 2008-2012 in consultation with partners and stakeholders. The query on UNDAF sought the advice of the WES community on the strategic appropriateness of key focus areas of the proposed programmes in water resource management and environmental sanitation. The responses encompassed various issues ranging from the possible role of the UN in the WES sector to ways of redefining and sharpening the specific UNDAF focus areas.

Responses on the perceived **role of the UN in WES sector** stressed the importance of the UN maintaining its focus on India due to its size and population. They argued that in spite of the country's impressive efforts in reducing poverty and promoting economic growth it still requires support. More than money, India needs best practices and learnings to improve management

and governance in the water sector. The UN agencies with their immense credibility and acceptance in India can play a crucial role in catalyzing a shift to better water governance. Participants also underscored the need for the UN to design strategies to assist India in tracking its progress on the Millennium Development Goals (MDGs).

Another major theme suggested by members was for the UN to facilitate an enabling policy environment to achieve greater **social inclusion and equity**, which they felt might become a casualty within the current demand-driven type of WES programmes. To this end, UNDAF could support national and state governments to develop sustainable and more equitable water governance systems. They also recommended that the UN play a key role in **building synergies** between multiple stakeholders and sectors for holistic treatment of water issues. For this, UNDAF's accent would be on effective coordination with various development partners at national and state levels, thus minimizing transaction costs and mitigating contradictory financing. Additionally, two **challenges**, which the UN could address, are eradicating scavenging (human waste disposal by head loaders) and promoting models of urban water resource management using clean technologies.

The issue of **augmenting the supply of water** through Integrated Water Resource Management (IWRM) with assured, sustainable gains and equitable distribution of benefits was also deliberated. Discussions covered various aspects of water conservation such as catchment treatment, rain and roof water harvesting in rural and urban contexts. Respondents suggested building and implementing comprehensive local plans for recharging groundwater to ensure supply sustainability.

In addition, participants asserted that only **capacity building of community institutions** could guarantee sustainability of water infrastructure. Key areas for empowering communities, members identified, were decision-making, design, implementation, monitoring and maintenance of various water-related programmes. There is also a need to design a dynamic and decentralized framework for better planning and decision-making on an ongoing basis, allowing for working out the details during the process. As an example of this type of capacity building is community owned and managed drinking water and sanitation facilities. Along with this, members recommended strengthening of habitation or colony-based water and sanitation task forces to meet regularly and connect with local governance structures in order to promote a sustainable style of water infrastructure management.

Additionally, the issues of IWRM and natural resource management emerged in discussions as significant areas for capacity building. As an example of strengthening community institutions to take up monitoring and surveillance in the water sector, respondents listed a successful project on community surveillance of groundwater in **Andhra Pradesh**.

For **better programme management**, participants underlined the importance of having stakeholders play a large role through consultations for programme design, implementation, outcome monitoring, in addition to communication and advocacy. Thus, members accentuated the need for WES programmes to shift focus from a "provision of water services" mindset to "facilitation and dissemination" frame. They also proposed tying up with national programmes like the National Rural Employment Guarantee Act (NREGA) for implementing programmes on water issues.

Considering WES' crucial linkages with poverty and health, respondents wanted UNDAF to lay greater emphasis on **drinking water and sanitation**. They specially underscored supporting strategies guaranteeing water and sanitation safety nets for all sections of society. Additionally, proper environmental sanitation in semi-urban habitations, such as the fringe areas between

Gram Panchayats and municipalities, is critical. Participants warned that pollution of ground and surface water by septic tanks and soak pits such could increase drastically, especially in hill states, with the rising number of toilets built under the Total Sanitation Campaign (TSC). Liquid waste (sewage) management and treatment (decentralized process) before sending it to the sewage line becomes especially imperative in these situations. Contributors also pointed out the Swajaldhara norms for water availability at 40 litres per capita per day (lpcd) as insufficient, as it does not include water needed for domestic animals, and thus need modifications.

Further, contributors listed a variety of prevalent **water quality issues** such as contaminations from faecal, iron, fluoride, arsenic, nitrate, fertilisers, pesticides, and viruses. Awareness of local communities on the importance of water quality is central members argued. Recognising the importance of wastewater treatment, they suggested that UNDAF include a detailed study on the impact of septic tanks on drinking water quality. Mapping and estimation of polluting units and pollutant load is another area the UN could take up under UNDAF.

Members discussed the use of **science and technology for the WES**, suggesting that the UNDAF look at introducing precision technology and remote sensing in ground water and surface water mapping with the Central and State Ground Water Boards and Public Health Engineering Departments. Additionally, respondents identified using low-cost technologies for purifying water needs to be a priority, like desalinisation and bio-purifier technologies.

In summary, the discussion illuminated UN's possible role in critically highlighting vital areas such as drinking water and sanitation and creating an environment for socially inclusive and equitable water governance in India.

Responses in Full

[Meenakshisundaram](#), National Institute of Advanced Studies, Bangalore

Thanks for the mail. While the areas already identified by the UNDP do broadly cover the key focus areas in the WATSAN sector, I would suggest the inclusion of the following three areas:

1. Advocate rainwater harvesting and other similar measures to facilitate water recharge in a systematic manner.
2. Encourage use of Science & Technology (such as precision technology and remote sensing) to test the quality of water and also for water extraction, management and recharge.
3. Build capacities, particularly among the civil society organizations and the local government institutions, for natural resource management so as to protect and preserve the environment, while reaping the benefits of these resources.

[Bharati Joshi](#), Ashoka-Innovators for the Public, Jaipur

First and foremost I must appreciate that the UNDAF 2008 is being formulated in consultation with partners and stakeholders. I would further suggest that the same spirit of consultation be followed in all the identified key focus areas, particularly for focus areas 4 & 5, of the focus areas.

I am basing my comments below on the functioning of UNDP's disaster management support initiative ongoing in Bihar, which I had the opportunity to observe closely in June 2006 while on a fortnight's stay in Khagaria District.

The technical inputs should not just be designed and delivered in a top-to-bottom manner, but should be customized and developed with stakeholders. The focus should thus shift from 'provision' to 'facilitation and dissemination'. The role of multiple stakeholders in the sectors should not be restricted only to advocacy and communication.

Similarly, in the case of focus area no. 5, a more consultative process of determining 'results' should precede the design of monitoring systems, otherwise the whole initiative might get bogged down by streams of data in the form of assessment formats and audit reports.

Incorporation of and stress on the above concerns in the assistance framework will add a human face to the technical language of the framework.

Ross Nickson, United Nations Children's Fund (UNICEF) Kolkata

The points given for the framework can further be simplified and made more definite as follows:

Assist national and state government to sustainably:

1. Improve sanitation.
2. Manage water resources and improve access to safe water.
3. Improve quality of water resources.

Most initiatives would fit within this framework. Am I missing the point or being too simplistic, perhaps?

I also feel that given the low levels of access and use of sanitation in many states, and its importance for MDGs, sanitation should definitely be emphasised more strongly.

Also, given the importance of drinking water quality problems in India (faecal, fluoride, arsenic), I would advocate that water quality also gets a mention. I can provide resources and experiences on water quality if required.

Ashok Kumar, School of Planning and Architecture, New Delhi

Firstly, let me congratulate the UN on involving the Community in framing policies for UN interventions in India. I offer the following suggestions for your kind consideration and possible inclusion:

1. Equity remains the central problem of India's development model, largely impacted by economic class and social caste systems. I believe that more than the market, policies of the Government international donor agencies generally perpetuate inequities. Therefore, UN agencies could take a leading role in helping formulate implementable policies with equitable outcomes. Examples of such policies do exist. For example, an extremely committed team of planners led by Norman Krumholz in Cleveland, USA successfully implemented transport policies for almost all vulnerable groups. Sustainability however remained a problem.

2. There is a lot of talk about solid waste management but very little focus on liquid waste management, particularly sewage management. I raise this point particularly because the existing systems still lead to scavenging i.e. some humans are compelled to collect human excreta from individual houses and deposit it at some far flung places. Thus, the dignity of people of a particular community gets very adversely affected. Although there are laws against scavenging, and a commission has been set up for eradication of scavenging, this inhuman practise continues to exist. May be the UN agencies could take up this as a policy challenge.

[Faiz Ullah Khan](#), Jamia Millia Islamia (JMI), New Delhi

I suggest that an assessment of the impact of septic tanks on groundwater in the spread of water borne diseases should be done and means should be identified to solve problems created by waste water in several parts of India.

[N. K. Purohit](#), RCPE, Jaipur

This is especially for [Ross](#), Congrats for not using the jargon which we are all apt to use, obfuscating the real issues whilst trying (often futilely) to project ourselves. I would suggest replacing the "and" in his second point with "to".

Though he has raised valid points on DWQ issues, what we miss are other major contaminants:

- Nitrates, due to uro-fecal contamination in urban areas with light, aerobic read sandy soils and due to indiscriminate fertilizer use in rural areas, coupled with flood irrigation
- Pesticides, again mainly in rural areas; the process of testing and mapping is yet to begin; These are just two of the important contaminants; there are several others as well, viruses pose another challenge as well.

As regards nitrates, there seems to be no techno-economically feasible treatment except blending; Even RO membranes have a claimed efficiency of only ~70%, whereas in some places, the levels are as high as 450 mg/l or more. Infantile cyanosis or methemoglobinemia is barely recognized by even doctors working in urban areas, a situation akin to fluorosis before Dr Susheela picked up the guantlet. Thousands of infant deaths could be routinely misclassified because of this lack of awareness as well as increasing use of bottle-feed despite advocacy by govt. media for breast-feeding. The "persuasiveness" of the pharmaceutical companies with doctors far outweighs any messages being broadcast.

As regards rainwater harvesting being used for groundwater recharge, it may work at community level in rural areas with high permeability soils, but again at the individual level, it appears to be prohibitively costly and do little except bring to focus the need to conserve water, which is nevertheless a laudable objective in itself.

The UNDAF should help in GW & SW quality mapping in tandem with CGWB and the state GWB's, PHED's etc.

As regards ground water recharge in urban areas, I have a couple of simple (hope they are not simplistic, and invite critiques from learned members) suggestions:

- No pedestrian walkway should be paved; instead, they should be lined with open jointed tiles, laid upon plain soil, bajri (river sand) and gravel to provide support.

- All (medium and large) covered storm water drains should have pervious bottoms with sort of check dams about 150 mm high (made of brick on edge may be) to provide retention time and some minimal head;

Preliminary cost estimates suggest that these two options are cheaper than conventional paving and construction.

For rural areas, at the individual household level, would it not be better to advocate for direct use as far as possible of the harvested rain? Most households (huts) there have thatched or mud roofs, with no regular access to the roof. So conventional harvesting would not work. Perhaps a large tarpaulin with a perforated HDPE pipe sewn on to it would come in handy. The pipe could then be connected to a tank at the GL or even a lined canvas bag (developed by some agency in Gurgaon for use in drip irrigation) may be used. The tarpaulin or polythene could be used for covering the roof during the rainy season. The advantages are manifold:

- Shall make the hut weather or at least rain proof
- Provide drinking water of the best chemical quality; it may be easily disinfected by chlorine tablets or bleaching powder
- The drinking water shall be available for part of the year (depending on rain pattern, roof area and storage capacity) right within the household.
- The option is not very costly either.

[Ravi Kant Sinha](#), Department of Drinking Water Supply, Ministry of Rural Development

The Group could also look at the monitoring and surveillance aspects for drinking water quality, generating awareness for it, separation of this role from the service provider and building the capacity of the communities to undertake this work in a responsible manner.

[Arunabha Majumder](#), AIIPH, Kolkata

I submit the following comments for your consideration:

1. Critical management and policy support must be area specific.
2. More thrust on environmental sanitation is needed for fringe areas (Panchayat areas close to Municipal areas).
3. Water quality Monitoring and Surveillance should be included in the agenda.

[S. Ramesh Sakthivel](#), WES-Net India, c/o Plan International (India), New Delhi

I agree with Mr. Meenakshisundaram that a special focus on water harvesting and management is needed. Water resource management in the past was taken up in a sporadic manner and the success has been area specific without resulting in a holistic approach. Contributing to the overall management of water resource right from water harvesting to water management can be achieved by developing a **"comprehensive recharge plan at a Local Level and followed by appropriate initiatives"**. Initiative of the Andhra Pradesh Farmer Managed Groundwater System Project is one of the good examples in this regard.

Facilitating the process of introducing **"community owned and managed water and sanitation amenities"** is essential for ensuring long-term sustainability and scaling up process. Specific focus towards achieving these must also be included in the support areas.

I hope the above points are of use in the preparation of UN interventions in the WES sector.

[Divya Sehgal](#), Freelancer-Environmental Issues, New Delhi

The twin issues of water governance and environmental sanitation are acutely related to increasing population and resultant load on civic services for both availability and maintenance. The following environmental sanitation issues can also be looked at as important for development of local area plans:

- Reducing the amount of wastewater generated in proportion to water input.
 - Installing rainwater-harvesting structures by individual and community groundwater users.
 - Capacity building of local masons for building community rainwater harvesting structures.
 - Status of polluting units operating in the area and pollutant load due to the effluents.
 - Decentralized treatment of sewage before connecting it to sewage line.
 - Resource centre in every colony where area profile and list of service providers is kept.
 - Empower the residents to make decisions and prioritize their most urgent needs by:
 - Forming a task force comprising women, youth wing members, local pradhans or RWA member. Include the area Junior Engineer as a member of this outfit.
 - Regular monthly meetings and reports sent to local councillor for speedy action.
 - Prepare a report card at end of a term for follow-up.
 - Build capacities regarding use of Right to Information Act.
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[Shital Lodhia](#), Centre for Development Alternatives, Ahmedabad

I appreciate the UN's attempt for involving partners and stakeholders in formulating UNDAF 2008. Most of the themes in water and sanitation sectors are broadly covered. However, in line with millennium development goals, there is need to concentrate on specific issues. Therefore, my suggestions are:

1. There is need to advocate low cost technological alternatives for drinking water supply. For instance, desalinization model working at local level and developed by CSMCRI, Bhavanagar is a very cheap alternative to provide drinking water.
 2. Quality of water is highly neglected in India. Quality is being considered by colour and taste only. There is lot of research going on around the world to develop low cost water purifier or bio purifier to provide safe drinking water. There is need to concentrate on this issue and advocate and disseminate such technology at micro level.
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[K. A. S. Mani](#), APFAMGS Project, Hyderabad

At the outset let me congratulate Preeti Soni to take the issue to larger audience for wider consultation. Such consultations shall help consolidate various suggestions. I have the following suggestions:

1. Facilitate capacity building/ strengthening of community (through NGOs) with skills and knowledge to take over the basic data collection on water, sanitation, health, hygiene, analyse and discuss at the community level for taking appropriate interventions/ maintenance. Involve stakeholders in design, implementation, monitoring and maintenance of various interventions.

2. APFAMGS (FAO funded project) is already involved in enabling community from 650 habitations to record all groundwater related data and take appropriate actions to manage the available groundwater optimally.
3. Piloting new programmes on drinking water and sanitation in such areas with enlightened community can ensure appropriate selection of technology, cost effective implementation and sustainability of the investments.

Jyotsna Bapat, Independent Consultant, New Delhi

While the water sector is an appropriate sector for intervention, and is currently receiving a lot of attention strategically, I believe that environmental issues pertinent to land and air - such as land degradation, reduction of forest cover, pollution affecting air, water, and land - are equally important in a developing country like India. Similarly, there are many other areas where water would have inter-linkages and which need to be integrated with water concerns.

I therefore feel that the focus on the water sector should not prevent us from ensuring synergies with other sectors and stakeholders. Priority should therefore be given to programs that are able to bring together multiple stakeholder partners and their combined actions to sustain the environment as a whole. Multi-stakeholder and multi-sectoral cooperation and synergies should thus be a priority.

Ranjit Kumar Maiti, Panchayat and Rural Development Department, West Bengal

This discussion is no doubt a good effort on the part of Solution Exchange. My suggestions are given below:

1. The list of focus areas may also include tying up with NREGA for its potential to unleash rural efforts in water and moisture conservation for sustainable rural development, as postulated in the 11th Five Year plan.
2. The participation of stakeholders in the development scenario is a vague term. Whose participation do we want- is it the people's representatives-who normally do not belong to the poorer class of the society? In my opinion, participation of the poorer class also depends on the following equation:

Participation = [Benefits - (Direct Cost+ Opportunity Cost)] x Risk of participation.

From this equation it will appear that the poorer people who take part in any rural development work do not get any direct benefits except a few days of labour. The opportunity cost also differs from person to person depending upon their perception, culture and the time of implementation of such activities in the rural setting. Again the risk of participation for any individual gets higher when he/ she works in individual capacity rather than in a group. Even the participation of women folk is very little in any decision making process. Thus, for every action, we must analyse whose interest is going to be served from any kind of intervention in the rural areas.

The crucial issue then is - how we can ensure participation of the rural people in decision making process, implementation and monitoring of any rural development works. Some states like West Bengal, Kerala, and Karnataka, etc. have been striving for participation of people through legislative measures like Gram Sansads, Gram Sabhas, and Palli Sabhas at the Gram Panchayat

level. In West Bengal there are Block Sansads at Block level and Zilla Sansads at District level. However, the poorer classes are not very interested in attending these Sansad meetings because they want immediate benefits for their livelihood, food and shelter. We must take into account the above points as they are the basic issues around which all other issues are centred in rural development.

The above is based on my experience in an Action Research Project - "Convergent Community Action--Village Planning by Villagers"- sponsored by UNICEF in 4 Blocks of West Bengal during 2000-02 and my experience in Pilots by the Zilla Parishad, Midnapore in a programme on Village Planning by Villagers in collaboration with IIT, Kharagpur during 1985-1987.

Rahul Banerjee, Aarohini Trust, Indore

This is in response to your invitation to give comments on the UN country plan.

The approach to water management in cities is totally skewed in India. The general trend is to source the water supply from some distant river and supplement it with excessive withdrawal from confined aquifers without any consideration about catchment area treatment or recharge of aquifers to ensure sustainability. Similarly waste water and storm water are sought to be led away by sewers and underground drains which are expensive to build and equally difficult to keep clean, given the huge plastic-waste load that clogs them up. Furthermore there is the problem of treatment of the water, which too is expensive. So effectively most cities and towns do not have any worthwhile sewage and storm water disposal systems.

Thus stress must be laid on developing local water supplies through catchment treatment and recharging of both storm and treating waste water in a decentralised manner at the point where it originates. Till date, there is no such example of a whole city's water management being done through decentralised and environmentally sustainable means. The UN should therefore take some steps in this regard.

V. Kurian Baby, Socio-Economic Unit Foundation, Trivandrum

Indeed great of UNDP to offer the formulation of UNDAF for consultation among the members. According to me the identified focus areas are quite appropriate considering the envisaged role of the UN, the broad objectives and framework of the 11th V year plan and the development needs of the country.

The basic challenge of the UNDAF would be to design strategies for the achievement of the MDGs, tracking the progress, outcomes and results. Obviously, as water and environmental sanitation directly and indirectly contributes to the achievements of all the other MDG targets, there is a strong rationale to focus heavily in the sector. Secondly, though India is fast moving up the ladder of growth and poverty reduction, on account of sheer size and absolute numbers, she should continue to be a focal point for UN intervention. Thirdly, as most of the investment programmes are demand driven, transition support is essential to ensure inclusion and equity. More than money, our country needs best practices and learning to improve sector management/governance. In order to catalyze that shift, the UN agencies with their immense **credibility and acceptance** can play a crucial role.

In the sector, we also have the multilateral funding agencies like the World Bank, ADB and the IMF, essentially bankers financing projects/programmes/structural corrections; the bilaterals with grants and loans and the UN agencies mainly providing technical assistance and knowledge management. The water sector crisis in India is largely managerial.

To supplement, I may suggest for UNDAF are

(a) as the broad objective of the draft UNDAF is environmental sustainability, the key focus could be on **IWRM** and improved water management so that the benefits are equitably distributed and the gains sustainable.

(b) greater focus on supporting programmes and strategies for **watsan safety (security) nets, inclusion and improved access** to basic services;

(c) facilitate effective **development partner co-ordination** at national and state level to minimize transaction costs and mitigate the impact of possible contradictory financing.

Let us design a dynamic framework that will facilitate better planning and decision making on an ongoing basis, built on pillars of **decentralization and** let specifics unfold itself during the process.

[Arumugam Kalimuthu](#), WES-Net India Core Group, c/o Plan International (India), New Delhi

Greetings from Plan International & WES-Net Secretariat,

The focus area listed is appropriate and relevant. In addition, the list can include the following aspects as well:

- Sustainability of drinking water supply system depends both on source and infrastructure sustainability. More focus on Integrated Water Resource Management (IWRM) is essential towards source sustainability. Strengthening of community based institutions and involving them in operation and maintenance of water system leads to infrastructure sustainability.
- The ever-growing water quality issues demands an appropriate community based water quality monitoring and surveillance system.

[Arun Dobhal](#), Swajal Project, Dehradun

The issues focused could be made more specific. I would like to take up the issue of the average water consumption per capita per day, which is 40 lpcd as per the Swajaldhara guidelines for the rural areas. This norm needs to be debated upon as this is not sufficient, especially keeping in view the cattle water demand, for which no provision presently exists. Thus the sustainability of the schemes is endangered right from the beginning.

Further, for hill states, the rapid construction of pour flush pit latrines in the Total Sanitation Campaign could lead to pollution of ground water and surface sources. A detailed investigation on this issue could be a part of your proposed programme.

[Suhas Gogate](#), ION Exchange (India) Ltd., Maharashtra

Along with the many suggestions coming from many members, I have the following findings and suggestions to submit for members' consideration.

Working in this field for last 15 years, and as a Rural Cell In-charge of Ion Exchange, I found that there are various ways to get rid of groundwater contamination. Units for removing Fluoride, Iron, Arsenic, etc. are now available which can be attached directly to hand pumps, points of use or community based units. Many other organizations use a diverse range of methods to remove such contaminants.

However, the problem is with the implementing agencies. Govt. provides such agencies funds for water quality testing, monitoring and removal of contaminants in programmes like ARWSP. If and when such units are installed, village communities do not take up proper maintenance of such units, and if the installation is at a remote site, people do not even bother to look at it.

In this context, I would like to suggest the following:

1. The Government, with the help of reputed institutions, should fix, freeze and approve the treatment methods to remove contaminants and subsequently inform the implementing agencies to buy units from approved manufacturers.
2. Village community MUST be made aware of the importance of safe drinking water and they must be made responsible for maintenance of these units.
3. Village community normally gets such facilities free of cost. Since it is important for their health, I would strongly suggest that they should pay a small amount for the facility of consuming safe water.

[Hirenkumar Rajendrabhai Patel](#), PRAVAH, Ahmedabad

I would like to respond to point 3 of the query regarding critical management and policy support to improve implementation and sustainability of national programmes.

In my opinion, we need to initiate a dialogue with Government or concerned government department for convergence of different programs such as TSC for sanitation and Swajaldhara for Drinking water supply. Our experience in Gujarat shows that TSC and Swajaldhara programmes were implemented separately with different priorities and different target groups. When we approached Swajaldhara for support for drinking water and sanitation, they suggested that we get in touch with TSC, which is implementing the sanitation component. Similarly, when we negotiated with government for development of water sources or for water recharge interventions under Swajaldhara, they responded Swajaldhara deals mainly with internal distribution system of water. Without recharging groundwater or harvesting rain water, we will not be able to achieve sustainable development of drinking water.

I would thus like to suggest that we should be considering water harvesting/ recharging and sanitation should be seen as complementary to each other, if we have to focus drinking water and sanitation issues towards poverty reduction.

[Amitava Basu Sarkar](#), Himalayan Institute Hospital Trust, Dehradun

This is a laudable initiative. UNDAF must look for innovative approaches to tackle rural sanitation options, as water supply and sanitation should be amalgamated. Case studies may also be included of effective watsan projects to learn from them. The attitudinal and legal monopoly, if I may put it like that, of the state departments working in the sector should also change to give way to a more participatory system of management, involving all stake holders.

For successful watsan projects in Uttaranchal, which are apt for case studies, I may recommend Swajal and Himmothan projects.

Bhawna Vajpai, Water and Sanitation Consultant, New Delhi

I suggest the following areas that UNDAF could promote through demonstrations, advocacy, capacity building, and building best practices:

1. Alternative Sanitation: Conventional water-borne sewerage systems generate problems like "wastage" of resources such as water, nutrients and organic matter; creation of point loads on the environment; impact on people living near the facilities; and generation of a "flush and forget" attitude to waste disposal. To overcome these, alternative sanitation approaches like Ecological sanitation; grey water filters and wet composting need to be promoted, and UNICEF Bhopal has demonstrated some of these. The UN may also work on studying the economics and ecological sustainability of alternate systems in comparison to the conventional water-borne sewerage.

2. Integrated water resource management: Demand for water is rising due to increasing populations, expansion of irrigated areas, and industrial development. Consequently, most parts of the country are facing increasing water scarcity. IWRM embraces integrated management of land and all aspects of the water cycle for sustainable benefit of humans and the environment. UN may make efforts to develop enough understanding of IWRM approach among professionals and help Government to draft IWRM and water efficiency strategies.

K N Vajpai, TNS India, New Delhi

I strongly recommend that Integrated Water Resource Management-IWRM approach should be the topmost priority for the UN Development Assistance Framework-UNDAF formulation team.

IWRM has been an area of major concern to country governments and environment professionals across the globe, as visible in major Global consultations from WSSD 2002, Stockholm World Water Week 2005 to Mexico's World Water Forum 2006. The approach is crucial for countries to meet development goals of reducing poverty, increasing food security, fostering economic growth, protecting ecosystems, tackling water-specific challenges like controlling flooding, mitigating effects of drought, expanding access to water and sanitation, and addressing increasing competition for water in the face of increasing water scarcity.

The Government of India's 10th working group (Five Year Plan 2002-2007) also recommended that water development plan should be implemented through 'integrated water management approach', to overcome our major water related problems of scarcity and pollution. The group suggested restructuring of implementing machinery at centre and state level and working together with NGOs and CBOs in planning, development and management of water resources.

Conservation measures in a smallest natural physiographic unit (micro-watershed) with emphasis on direct and indirect artificial recharge of aquifers by utilizing surplus runoff are important concerns raised by the 10th working group. In addition, rainwater harvesting, traditional water source development, restoration of existing water infrastructure, checks and balances for water intensive crops, restricting deepening of agriculture bore wells, recycling of waste water in productive ways with strengthening and capacity building of users are the important recommendations of the group.

The major concern seems that, implementing IWRM approach needs clear strategies and guidelines. This should also encompass the ecosystem approach, and here all the agencies need time to understand and internalise the common concerns. Otherwise, interpretation of integration will lead to a chaotic situation all along the way, as exists in the present scenario on water management.

Ajit Seshadri, Vigyan Vijay Foundation, New Delhi

It is time that successful implementers in various regions should come forward and throw light on the following decentralised initiatives in WES sector:

1. Both urban and rural wastewater disposal is not adequate, and it is best to create feasible pilot projects for the safe disposal and, where possible, recycling of wastewater for lower end uses.
2. Storm water drainage is deficient, and so much good water is available seasonally that it appears that just the will and drive is missing for storing surface water-bodies or taking up ground water recharge where possible.
3. Waste management strategies for ensuring that all bio-wastes are utilized are also lacking. Bio-wastes come in two forms – “clean” wastes from gardens, leaf litter and grass cuttings, etc., which can be handled manually and wastes containing pathogens, which require sanitising before they can be handled. The clean wastes can be composted and used to raise nurseries in public parks, as can be seen in some municipal bye-laws. The “unclean” bio-wastes coming from stale food items, vegetable market wastes, etc. can be taken up for bio-methanation using bio-gas plants. We have been working on this and it is easily feasible.

If these simple innovative initiatives are taken up wherever possible, we can vastly improve water management. Let us work out a system for promoting these simple initiatives.

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 WES-Net at se-wes@solutionexchange-un.net with the subject heading “Re: [se-wes] Query: UN interventions in the WES Sector, from UNDP, New Delhi (Advice). Additional Response.”

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