India WASH Forum

WASH News and Policy Update Bi-monthly e-Newsletter of India WASH Forum Issue # 27, Dec 2012

India WASH Forum News

India WASH Forum stands for an independent credible voice in the water, sanitation and hygiene sector. WASH News and Policy Update is a bi-monthly e newsletter of the India WASH Forum. It is an open platform for engagement on contemporary issues in WASH sector in India and elsewhere.

We are conscious of the need to engage with and understand other larger debates in the social and economic development scenario, of which drinking water and sanitation is a part. Hence we include in our news analysis and policy updates, events and developments from other related development fields, besides the WASH sector. We invite readers to share their experiences and reports that can be disseminated from this WASH Policy Newsletter. This is our 27th Issue and we wish all our readers a very Happy New Year.

The Newsletter includes the input of **India WASH Forum in the National Convention on Peoples Budget Initiative for the 2013 Union Budget** held by the Centre for Budget and Governance Analysis and a Report on the Greening of the national rural drinking water programme of Govt of India. We also include the **IWF Report to the MoRD-MoWS and UNDP international workshop on Greening of the Rural Water Supply Programme of Govt of India.**

Not only Delhi but several parts of India are rocked by the public anger and protests against the heinous gang rape in Delhi. Public protests have seen a large participation of women, students and youth on the streets. Several womens organisations and student bodies have come together on this important issue**. Mazher Hussain explains how the 11th Plan succeeded in achieving a remarkable rate of growth, it also witnessed impoverishment and exclusion of large sections of the populations from benefits of development.** Despite an average 7.9 per cent growth in GDP (Gross Domestic Product) during the 11th Plan Period -sometimes peaking to 9 per cent- the performance of India in terms of the Human Development Index (indicative of inclusive growth and the extent of population benefiting from development) saw a downward slide from 128th and 127th positions in 2000 and 2005 respectively to 134th position in 2009 and 2011. While a handful are reaping benefits and have entered the billionaires club, millions are being forced into deprivation and disempowerment. For the first time in history, four Indians found a place amongst the 10 richest people of 2009, but three out of every ten poor people in the world in the same year were also Indians - an unusual phenomenon of continuing poverty and marginalisation in the midst of galloping plenty. A report of OECD (Organisation of Economic Cooperation and Development) released in December 2011. The OECD Report further shows that the top 10 per cent wage earners in India now make 12 times more than the bottom 10 per cent. Ironically, this was also a period when the GDP of the country started increasing at an unprecedented rate making it one of the fastest growing economies in the world."

Wilson Bezwada from Safai Karamchari Andolan has shared the **recent Supreme Court Order that admonishes the Uttrakhand government for not taking action to stop manual scavenging**. "It is a case where the efforts of the Court to reach or discover the truth has been foiled by calculated attempts on the part of the officers of the State of Uttarakhand. While referring to our earlier order, we reiterate that the affidavits filed by the Patwaris were in a mechanical way without examining the true position on the field. This had compelled us to request the District Magistrate to file affidavit and obviously after verifying the facts. The District Magistrate's affidavit is patently incorrect. It is a matter of great concern for the

Court to notice that such senior officers in the hierarchy of the Government, filed incorrect affidavits without personal verification, with an attempt to defeat the public interest litigation which entails to further the cause of the statutory provisions of the Act and the constitutional mandate contained under Art. 21 of the Constitution. The effort of the State in this case appears to be totally directed towards showing that petitioner has not stated correct facts before this Court rather than to discharge its obligation of putting an end to the social evil of manual scavenging, dry latrines in the District of Haridwar."

World Bank has come up with a Report of its support to the rural water supply and sanitation sector in India. The report does a comparative analysis of its projects along with other projects of rural drinking water supply implemented by the government, to conclude that its projects have done better. It also highlights the causes of failures and lessons. It is for the CSOs to analyse and draw lessons for what ails the rural water supply sector and the ambitious aims of grid based piped water supply that is being promoted in the national rural drinking water programme(NRDWP 2010) guidelines of Govt of India. Where will the water for 24x7 piped water supply to 55% of the rural household come from? What are the lessons from failures of multi village piped water supply schemes that promote this approach?

The 12th Five Year Plan of India talks "of India moving forward in a way that would ensure a broad-based improvement in living standards of all sections of the people through a growth process which is faster than in the past, more inclusive and also more environmentally sustainable". Planning Commission of India first started talking of "inclusive growth" as an objective while formulating the 11th Five Year Plan which was in operation from 2007 to 2012". Inclusive growth, gender and social inclusion therefore again feature as a theme in the 12th Plan.

Gender in WASH : Misplaced perspective in WASH sector

The last issue of our Policy Newsletter had focussed on **Gender in WASH**. The current issue includes the second day deliberations of the national workshop on Women Led Water Management Workshop of IRRAD in Delhi/Gurgaon in Nov 2012. Gender and Water Alliance organised a meeting on Gender and Water at the IDRC Delhi office on the 27th Nov 2012. The meeting sought views from organisations and practitioners on priorities for taking forward gender and water related work in India and elsewhere.

In both these meetings, **Gender perspective in water and sanitation** was raised by IWF. Womens participation in water projects and programmes is often taken as an indicator of gender. Hence focus on menstrual hygiene, womens access to water and sanitation. International WASH sector development agencies tend to focus on Policy and Programmes, Technologies and Schemes that allow women and other socially excluded groups to not only access WASH entitlements and subsidies but to also make monitoring access disaggregated for women and socially excluded groups. While this may justify as a womens centred approach to better service access, does this constitute a Gender in WASH approach? While it is true that womens access to basic services including WASH infrastructure and subsidies needs to be monitored and ensured in all programmes and schemes – what about the larger issues of power and control, of denial of opportunities and disempowerment that women face from the state and from patriarchal sensibilities? Unfortunately most of the WASH work in Gender is restricted to a programming perspective that often ends up reinforcing gender stereotypes while trying to work on WASH entitlement issues for women.

The study by JAGORI on Delhi slums issues of basic services including WASH, highlights this very well. In addition to poor WASH infrastructure, it identifies physical and social barriers that prevent women from raising their voice and securing basic service entitlements including WASH. That these barriers are larger than technology design and monitoring of access issues alone. These barriers have a larger social and economic context and the demands for a gendered WASH approach need to look at issues of power and control affecting womens work and livelihood choices not just home keeping. The IRDC supported JAGORI study of Delhi slums identified lack street lighting and the lack of well maintained public toilets that cannot be accessed in the dark, the lack of good quality affordable public transport - as major barriers that keep women home bound and insecure.

Why only care givers and mother are portrayed in all WASH media posters as targets for behaviour change for hand washing and sanitation behaviours change? When we all know that it is men who need to change behaviours. Why then most of the media campaigns reinforce this gender stereotyping? Promoting womens leadership in WASH should also not mean simply demanding more women in senior positions in the government and NGOs. Is this sufficient to make the organisations and their work agenda gender sensitive? While not denying that women's leadership in government and even in NGOs is not recognised and provided for, having a woman leader may not change the situation also needs to be recognised. Gender after all has to do with power and women in power may not be different from men in power. Implementation of

Anti Sexual Harassment Policy, more representation of women in male dominated PHED engineering staff and articulation of womens knowledge and issues in WASH sector are priorities.

Implementing agencies have more to offer in terms of their ground experience to support donor agencies and the work done in Womens Development Programme in mid 1980s in Rajasthan and by womens groups like Kutch Mahila Vikas Sangathan, Utthan and Jagori – has valuable lessons for donor agencies and support organsiations to learn from. A rooted field based NGO usually has a longer term larger womens empowerment focus which cannot be put into short term project approaches. Creating space for women to express themselves and to slowly take on more decision making responsibilities, is a long term empowerment process. Experience of an innovative pilot project(Womens Development Programme, 1986-88) in Rajasthan under a DANIDA funded, was instrumental in rural women developing first and understanding of their own bodies including the reproductive cycle and within a caste divided context. This pilot programme involved women activists working closely with village women to develop their agency. It produced excellent material and leadership amongst local women. The programme gave birth to the Mahila Samakhya programme of government of India(though with much of its empowerment aspects getting lost).

The main challenge is who will deliver on women led water management in the large well funded government programmes of drinking water and sanitation. The government agencies consisting of engineers of the state Public Health and Engineering(PHED) or Rural Development Department, do not have field staff who can undertake water and sanitation programmes with a gender empowerment focus. The result is commercial marketing focussed IEC materials including posters, jingles and short films with cricketers and film stars – that have little impact on sustaining behaviour change.

CLTS is one approach amongst many, to promote sanitation. **Whether exclusion and gender are addressed adequately in CLTS** is yet to be proven? As a programme approach, there is nothing wrong in adopting it for sanitation coverage and many programmes including Global Sanitation Fund are using CLTS as a programme approach in Jharkhand, Bihar and Orissa.

It is true that we do not have women(wrongly called Gender) and disability disaggregated data for WASH programmes, we do have commitments from the GoI on including budget allocations and monitoring of SC & ST coverage, making specific entitlements for women headed and disabled households in the NBA, etc. We also have budget allocation and monitoring specifically for SC and ST populations by the Ministry of Water and Sanitation. However whether these be rural and urban water supply or rural and urban sanitation schemes – **the way they are being designed and implemented - under the emerging discourse of 24x7 and PPP for drinking water and urban sanitation and for contractor lead rural toilets construction** – the impact this has on the pricing of urban water and sanitation services and access to rural sanitation – it may end up excluding the majority of the poor, including women and excluded groups.

Growth and Justice: 12th Five Year Plan Prescriptions : Mazher Hussain

http://www.epw.in/web-exclusives/12th-five-year-plan.html

The Planning Commission of India posted the draft Document of the 12th Five year Plan on its website in the first week of December 2012 for feedback from the public before it is adopted by the National Development Council (NDC) on 28 December and declared the Five Year Plan for the country from 2012 to 2017. The stated vision of the Plan Document is "of India moving forward in a way that would ensure a broad-based improvement in living standards of all sections of the people through a growth process which is faster than in the past, more inclusive and also more environmentally sustainable". Planning Commission of India first started talking of "inclusive growth" as an objective while formulating the 11th Five Year Plan which was in operation from 2007 to 2012. But we find that while this 11th Plan succeeded in achieving a remarkable rate of growth, it also witnessed impoverishment and exclusion of large sections of the populations from benefits of development. Despite an average 7.9 per cent growth in GDP (Gross Domestic Product) during the 11th Plan Period -sometimes peaking to 9 per cent- the performance of India in terms of the Human Development Index (indicative of inclusive growth and the extent of population benefiting from development) saw a downward slide from 128th and 127th positions in 2000 and 2005 respectively to 134th position in 2009 and 2011. While a handful are reaping benefits and have entered the billionaires club, millions are being forced into deprivation and disempowerment. For the first time in history, four Indians found a place amongst the 10 richest people of 2009, but three out of every ten poor people in the world in the same year were also Indians - an unusual phenomenon of continuing poverty and marginalisation in the midst of galloping plenty.

A report of OECD (Organisation of Economic Cooperation and Development) released in December 2011. The

OECD Report further shows that the top 10 per cent wage earners in India now make 12 times more than the bottom 10 per cent. Ironically, this was also a period when the GDP of the country started increasing at an unprecedented rate making it one of the fastest growing economies in the world.

The deprivation and exploitation of millions of poor seems to be turning them against the system as they find themselves more and more excluded from the benevolent and protective character of the State. This disenchantment and exclusion of the masses is getting translated into a variety of social and political conflicts and manifests itself as agitations, riots, resistance, militancy and even demands for secession organised around caste, class, communal, regional and ethnic lines. Already one-third of the country is afflicted by some form of serious conflict due to the exploitative and unsustainable philosophy of growth we seem to be pursuing. Even the Planning Commission has explicitly stated in its Plan Document for the 12th Five Year Plan that "agitations around land acquisition, deforestation, water use, air and water pollution, and also our response to natural disasters have become more and pose challenges which this Plan must address squarely."

The Plan Document asserts that "our focus should not be just on GDP growth itself, but on achieving a growth process that is as inclusive as possible" and rightly accepts that "strong inclusive growth is the only scenario that will meet the aspiration of the people". But in terms of its approach and methodology, it unfortunately continues its primary focus on providing impetus to "growth" (fixing a target of achieving 9 per cent GDP growth), but adopts no methodologies to measure and monitor "inclusive growth" despite explicitly mentioning that "the extent of inequality is measured by indices such as the Gini coefficient". If the Planning Commission is indeed serious and honest about "inclusive growth" then it should also fix targets for Gini coefficient, HDI and other such measures also. Otherwise it would appear that "inclusive growth" is being used more as a slogan for effect than a parameter for the planning process.

National Convention: Water and Sanitation considerations for the 2013 Union Budget

The Centre for Budget and Governance Analysis held its national workshop in Dec 2012 in Delhi, following a process of several regional consultations. The following presentation was made on behalf of India WASH Forum to inform the finalization of the recommendations of the Peoples Budget Initiative of the CBGA.

Larger issues of Policy and Perspective that determine the investments and decisions in WASH, are perhaps more important in such a national cross sector development forum.

For example while it is true that we do not have women(wrongly called Gender) and disability disaggregated data for WASH programmes, we do have commitments from the GoI on including budget allocations and monitoring of SC & ST coverage, making specific entitlements for women headed and disabled households in the NBA, etc. We also have budget allocation and monitoring specifically for SC and ST populations by the Ministry of Water and Sanitation.

However whether these be rural and urban water supply or rural and urban sanitation schemes – the way they are being designed and implemented - under the emerging discourse of 24x7 and PPP for drinking water and urban sanitation and for contractor lead rural toilets construction – the impact this has on the pricing of urban water and sanitation services and access to rural sanitation – it may end up excluding the majority of the poor, including the excluded groups.

The larger political economy of water sector alongwith the health, education and other sectors – is what will perhaps have meaning in the national conference today. It does not mean that addressing exclusion and gender is not important.

1. **Overall scenario**
    a. Plan Allocations for rural water supply and sanitation are increasing. After Defence Budget, perhaps the WASH sector national budget is second only to the Rural Development Budget, perhaps more than the Irrigation Sector annual budget outlay. Although in GDP terms it remains roughly 0.42 percent of GDP (as in 2010-11 BE).

   b. Per capita outlays for Piped Water Schemes in rural and urban areas surpassing previous norms - inviting misuse of resources and massive corruption.
2. Like the Irrigation sector, more investments in rural water supply and sanitation in the last decade – have not translated into increased access to water and sanitation. Rural sanitation coverage has come down to 34% as per Census 2010, as against official estimate of 70%. Habitations fully covered with drinking water as per MoDWS, fell from 96% to 69% in 2011. Hence WASH sector saw increase in outlays but a fall in coverage, access and usage.
   a. Rural Toilet construction is becoming lucrative contractor job, with the increase in toilet subsidy to Rs.9600/toilet.
   b. Toilet subsidy increased. Policy commitment to ODF villages but no provision(Rs.3000) for repair of defunct and broken toilets as was proposed in 12th Plan Working Group consultations. No provision for a bathroom alongwith the toilet as was proposed in the Working Group recommendations to the Finance Ministry.
   c. JNNURM budget allocation for Urban water and sanitation – share of basic urban services of water and sanitation should be spelt out in this otherwise open ended programme. Municipalities in several cities proposed 50% of JNNURM city budgets be allocated for water and sanitation and specially to meet the large slums and unauthorised colony populations who are denied access to basic water and sanitation.

3. Perspective related

   a. The promise of 24x7 supply and PPP as a way forward for reducing inefficiency, reducing NRW, improving water quality and grievance redressal needs to be re looked.
      i. Merely increasing budget outlays is not enough. We need to insist that increased budget outlays are spent on strengthening public utilities and not privatised contracts.
      ii. Questioning the feasibility of 24x7 water supply in predominantly dryland country context of India, logic and
      iii. Experience of PPP as a magic bullet for addressing all ills.
   b. The potential of High investments = High corruption in water and sanitation sector, is a threat.
   c. All new projects in rural and urban water and sanitation have budget allocation for hardware of pipes and technology - and not enough for the O&M. Leading to a situation of constant disrepair and the logic of build-neglect-rebuild and super profits for contractors and businesses.
4. Staffing shortages in urban water Utilities is affecting performance and service level for the poor. The situation is particularly bad in Urban Water and Sanitation Utilities where some cities like Mysore have just 2 or 3 Engineers and more than 50% of the works are privatised and contracted out. The Union and State Budgets 2013-14 should make specific provisions for filling vacant posts and ensuring commitment to retaining water and sanitation as government responsibility and a public good. Backdoor privatisation to be ruled out and lessons learnt from Re-Municipalisation of water and sanitation services in France and USA where private companies making super profits are being brought nationalised.
   a. Behaviour Change Communication(BCC) is narrowly focused on addressing Knowledge Gaps – not addressing underlying causes that affect peoples thinking and that in turn affects their behaviours.
      i. Expensive campaigns using film stars and cricketers in a large multi cultural rural Indian context and focussing on knowledge gaps – have failed to improve standard indicators of hygiene behaviours in WASH
      ii. Reliance on commercial advertising agencies to design and deliver communication strategies undertaken as typically marketing exercises – have failed to improve WASH practices.
      iii. Who will do behaviour change communication in rural areas? No one there to do this work on the ground, specially in rural sanitation arena. Recommendations given to the 12th Five Year Plan for incorporating a separate cadre of staff to promote rural sanitation and hygiene not accepted.
      iv. CLTS as an empowering or disempowering sanitation awareness methodology? If undertaken without a larger perspective of Rights.

5. Policy related issues

   a. Empty promises and commitments to equity in rural water supply. National Water Policy shifts focus from water as a public good to water as an economic good, increasing tariffs for water and sewerage proposed in the draft Policy 2012 and resisted by civil society.

b. Where will the additional water for 24x7 rural and urban water supply come from? Why a focus on heavy investments based rural water supply? Only some states in eastern India can claim to have enough water, not 2/3rd of the country.
c. No Policy commitment and Funding for addressing Urban Sanitation for the Poor. National Urban Sanitation Policy makes no commitment to provision of basic services irrespective of tenure. Hence no budgetary commitment to this effect either, that can be tracked and monitored in implementation.
d. No commitment to the 2010 UN Resolution on Right to Water and Sanitation. No commitment in terms of defining what we mean by Right to Water and Sanitation in India, what we want to be done to ensure this as a right, no specific goals or road map and time frame for achieving them. This is a government responsibility to define and deliver on commitments made.
e. SACOSANs becoming forums for international agencies presentations on WASH, and cooption of the NGOs and civil society in justification of lack of progress in sanitation.
f. Monitoring of Policy commitment to abolition of manual scavenging, not done. Rehabilitation of manual scavengers not being monitored.

6. National water programme related

a. Village and District Water Security Plans are non starters. No way these can be done by PRIs alone. No mechanism for providing support to PRIs and budgetary outlays for involving resource agencies, universities, peoples participation.
b. Grid based multi village water supply schemes proposed under NRDWP 2010. Have been a massive failure in the past. Why repeat this? Large funding for this coming from World Bank loans that will be public debt in future.
c. Water Quality monitoring not being done as per the commitment of NRDWP that each water source should be tested twice a year. Commitment to these actions need to be stressed in Budget Allocations and follow up monitoring commitments for 2013-14.
d. Environmental Audit of technologies for sustainability and water conservation not being done.
e. Green technologies introduced without scrutiny for standards for what is best for each scheme – eg. Solar power based water supply - invites corruption.

7. National rural and urban sanitation programme related

a. Failure in rural sanitation(toilet usage) primarily a result of contractor based toilet construction and not a failure of technology and behaviours.
b. One year wasted in the delayed notification of NBA guidelines, no matching fund this year from NREGA in most states.
c. No baseline for NBA programme – mismatch between Census 2010 and state records. No baseline for the new categories of recipients.
d. No commitment to provisioning of household connections to slums and unauthorised colonies. No budgetary commitments to this effect that can be monitored.
e. No commitment to good quality standards in urban community toilets with washing and bathing facilities for urban poor. No budgetary outlay for this.

8. Institutional aspects of programme delivery

a. Lack of coordination at District level between the District Administration and Nodal WASH agency(PRI, RD, PHED)
b. Alignment of subsidy release with BCC
c. 100% ODF aim and the issue of BPL lists not updated and baselines not done
d. PHED and RD departments do not have staff and interest in handling sanitation programme.
e. Lack of trained and motivated PHED staff
f. Privatisation of rural water supply pipeline works under PHED. Poor norms for scrutiny and accountability.
g. Staff in urban Utilities made redundant, shortages in recruitment to Municipalities and Urban WASH Utilities. Resulting in more and more privatisation of work contracts, O&M, increased tariffs and false promises of 24x7 supply.

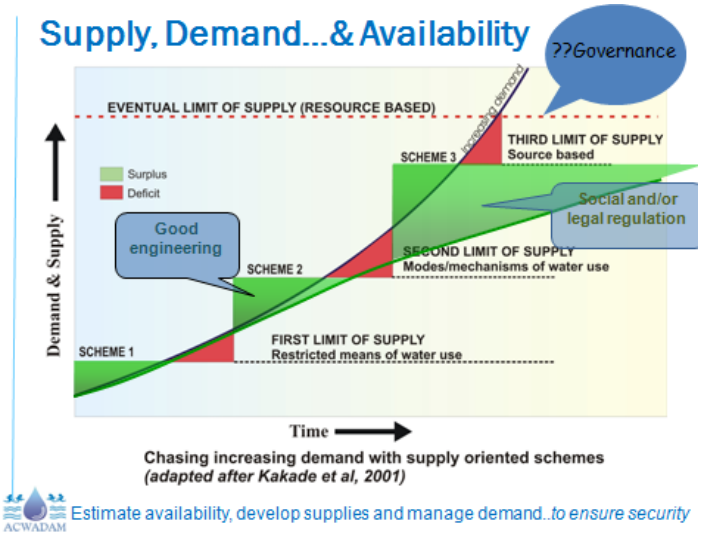
Greening of the National Rural Drinking Water Programme of Govt of India: Report

UNDP and Ministry of Drinking Water and Sanitation held an international workshop on 14th May 2012 in Delhi to inform the "Greening the Rural Development Programmes of Govt of India, including the National Rural Drinking Water and Sanitation Programme". The Report, a desk study based research on behalf of India WASH Forum for "Greening the NRDWP" is shared below.

Recommendations

UNDP sponsored a quick study to look at all the programmes under the Min of Rural Development and the Min of Drinking Water and Sanitation – to identify gaps and remedial actions towards greening of these programmes. The report is based on a desk review of the national rural drinking water programme guideline and lessons drawn from a few innovative programmes in India that have addressed environmental issues in addressing water supply service delivery in rural areas. The draft recommendations of the study were presented to the Minister MRD and MoWS and a gathering of experts and practitioners organised by UNDP on 15th May 2012 in Delhi.

There is increasing pressure and demand for water supply. New technology has extended our ability to extract more water. In the setting of a village, we find more than one drinking water scheme is taken up or more than one water sources are created – yet there is shortage of water. **See graph below(**Courtesy Mr. Himanshu Thakkar, ACWADAM)



Good engineering can augment water supply but good governance is needed to insure demand management and sustainable water security. Social and/or legal regulation will be required to manage and control water demand. This will ensure that the same water can be shared over a longer period of time or with increasing population.

Key recommendations of the study are;

1. **Meeting rising expectations of drinking water supply with assessments of environmental impacts of increasing supply**. Peoples expectations for piped water supply as tap water inside their homes in place of public handpumps, is evident everywhere. Rural folks witness large water supply schemes for urban areas drawing water from distant rivers and lakes, often bypassing several villages on the way. In meeting the piped water supply expectations in rural areas, environmental considerations need to be assessed;
   - 1.1 **Where will the additional water for enhanced rural water supply come from?** There cannot be permanent water security without managing demand for water and only focusing on augmenting supply. This needs to be prominently addressed in any Policy and Guidelines statement of rural water supply
   - 1.2 **Fragile ecosystems** of deserts and areas with impermeable soil types have a risk of rising ground water tables threatening human settlements and agriculture. This was witnessed recently in Jodhpur district in Rajasthan water

resources created to meet drining water demand lead to rising ground water table and salinity.

1.3 **Dependence on long distance piped water supply networks r**equires complex multi village water supply networks and management systems. Operation of these schemes is complex. If not operated with a resource conservation and resource efficiency perspective, these can inflate demand, lead to wastage of water and emergence of secondary problems of water logging, and disease burden increase among others.

2. **Making the NRDWP(2010) guidelines greener**. The national flagship rural water supply programme guidelines have many positive elements. The recent experience of the 2012 Draft National Water Policy has lessons for the NRDWP as well.

2.1 **Defining the non negotiable in the NRDWP and prioritizing ecological and environmental considerations** will help. This could include for example

2.1.1 Comprehensive community based and not simply a technical water resources planning taking into consideration all uses of water and not just drinking water.

2.1.2 Prioritizing local sources over external sources of drinking water supply

2.1.3 Demarcation and protection of drinking water sources in a village

2.2 The Draft National Water Policy 2012 has many positive elements but the priority that was needed in the Preamble/core of the Water Policy is missing. There needs to be **an explicit policy statement in the NRDWP guidelines on managing the increasing demand for domestic water and, for securing water as a common pool resource** – before looking at solutions for augmenting supplies.

2.3 Where additional water is required for expanding the piped water supply, sustainability of the additional water source needs to be established. As a guidance, the **NRDWP should prioritise dependence on local water source and investment in improving local water sources**.

2.4 **Priorities of local communities/Panchayats in situating the water source, in deciding on the technology and type of water supply – should be accepted by the Rural Water Supply engineers.** Often expensive engineering solutions are imposed from outside, these have a high running cost and O&M implications and are not sustainable. It is also true that in some instances the Panchayat may decide on expensive unsustainable piped water supply systems. However, as a principal of democratic governance and as per the NRDWP guidelines of Panchayats taking over water supply, there is no short cut. Transparent "Water security planning" is required. Any village water supply planning should not remain an engineering exercise in closed files.

2.4.1 Village water supply system with its capital cost, running and O&M implications - should be prominently displayed in the village for all.

2.4.2 Repeated failures to develop sustainable water sources from government funding should be discouraged. This should be done as part of the IEC component.

3. **Third party environmental audits of drinking water schemes and programmes** are needed. Currently state level technical agencies are themselves evaluating the impacts of their technical interventions ranging from fracturing, blasting and fissuring, underground dams, etc. These are being done as means to increase permeability of ground water and recharge aquifers.

4. **Drinking water quality assurance**. Water quality is emerging as a major concern across rural India. Water pollution ranges from E Coli induced bacteriological contamination to Flouride and Arsenic emerging in ground water after intensive exploitation of groundwater, to industrial and agriculture based ground water contamination. NRDWP guidelines make provision for an upgraded Water Quality Surveillance programme with district level laboratories for monitoring water quality. The following actions will help in ensuring better results;

4.1 **Some emergency interim measures to monitor water quality** on a sample basis is needed, till the time that the protocol of 100% water source monitoring for water quality is put in place. If this is not done, there is a risk of health impacts on a large section of the poorest populations that are affected by water quality problems.

4.2 **IEC programmes should focus on water quality issues.** Specially in Arsenic, Flouride, Uranium and related contamination that is not visible or whose impacts are slow and fatal in the long term. Lack of awareness to contamination of ground water is a major factor that needs to be addressed urgently as a first step towards addressing it.

5. Source sustainability. Source sustainability is prioritized in the NRDWP guidelines. Village and district level water security plans are expected to deliver sustainability of water sources for assured and enhanced water supply. preparation of these plans is supported by the programme allocations. This is a welcome step. In order to ensure that the water security planning is effective and not yet another technical paper produced by the District Water and Sanitation Missions, engagement of community in the planning process is required.

5.1 **Water security planning keeping the priorities right**. Keeping ecological considerations at the base of all water planning, prioritising social mobilisation for community control, applying water science for identifying the best engineering solution and then going in for an engineering solution – this is the process that needs to be followed under NRDWP for the water security plans that are being prepared currently.

5.2 **Comprehensive water use planning**. The experience of Hivre Bazar in Maharashtra has shown that comprehensive water use planning is required taking into consideration all types of water uses and controlling demand for different uses of water in times of drought. In most parts of India, water security plans will need to factor in all demands on water and ensure that sources of drinking water do not dry up. Capacity of Panchayats and support of technical support agencies, NGOs and experts will go a long way in making comprehensive water use planning an ongoing concurrent exercise that facilitates choices, and not a one time activity for producing a report.

5.3 **Drinking Water security mapping with community involvement**. Experience of Sahjeevan Trust in Gujarat has shown that in the extreme arid environment of Kutch district, it is possible to achieve drinking water security by developing local water sources and from rain water harvesting. By involving the community in identifying the water sources, it is possible to do ground truthing based water resource planning at scale. Sahjeevan achieved this for 50% of the blocks of Kutch district. Village maps were prepared outlining priority drinking water sources. The plans were followed up by community measures to protect, develop and recharge local water sources for village level drinking water security.

5.4 **Well based drinking water supply**. Dug wells are being developed as an environmentally green option for sustainable water supply. The coming of hand pumps and borewells had lead to abandoning of the dug wells that were the traditional sources of safe drinking water. Emergence of water quality issues of Flouride and Arsenic and the falling ground water levels and borewells, has revived interest in dug wells. NREGA provisions for reviving dug wells and the situating of dug wells along river beds and water aquifers, with the active engagement of community and their knowledge in situating the well and in managing the source, has given a boost to dug wells.

5.5 **Stream flows for water and sanitation security in eastern and western ghats**. There is a potential to develop stream based drinking water and sanitation infrastructure in the eastern and western Ghats. Ensuring stream flows is a key to sustainability of this measure. Water from the streams can be tapped in storage tanks/sumps along the stream bed in the valleys, for supply to the habitations for their sanitation and drinking water needs and transported upstream using pumpsets including solar pumps as demonstrated by Sahjeevan Trust. Water purification and treatment measures will need to be installed.

6. Resource use efficiency : greener technology for rural water supply.

6.1 Gravity flow systems of rural water supply in hilly terrain and in remote tribal areas are an environmentally sustainable means of water security. Many NGOs in eastern and western ghats have been developing potential sources of gravity low systems of water supply for both irrigation and drinking water.

6.2 **Gravity flow based water systems can be augmented with stream based water conservation, treatment and pumping systems.** Recent experience shows that where stream flows exist, there is a higher potential of water use possible. There is a need to look beyond gravity flow based water supply systems to higher investment in stream based water supply systems. Investment will be needed to first ensure stream flows by taking physical and social measures to augment stream flows and prevent water pollution. Secondly, investment will be needed in creating water storage infrastructure of water tanks, purification and pumping to habitations upstream(overhead water tanks) for household level supply of water to meet all household water needs and if possible also for livestock.

6.3 **Solar pumps for drinking water supply.** Conventional energy of diesel and electrical pumpsets is a major operating cost input of piped water schemes in rural and urban areas. Failure to pay for repairs and maintenance of pumping systems and of electricity bills often results in discontinuation of electricity and pumping of water. Recent experience of small Photo voltaic cell based pumpsets of 0.75HP in providing a ground lift of more than 30mts, low operating and maintenance costs, has given a boost to solar pumps as energy sources. Tie up can be forged between MoWS and Ministry of non conventional Energy to develop practical options for more solar pumpset installations in rural water supply. a mix of institutional and household water supply systems using solar pumps should be tried and monitored in all states of India and lessons drawn for wider analysis and modification of schemes in a conference cum research mode.

7. Conclusion: Incremental steps to green rural water supply

7.1 Guidelines must commit explicitly to specific green results

7.2 Proposals from GP level upward must contain green impact assessment of resource development and use. Sanctioning authority must provide for green activities (such as water source recharge) within each approved project;

7.3 Steps should be taken to ensure water source sustainability before construction of the drinking water supply system

7.4 Monitoring of water quality at GP level must be done twice a year for groundwater, and daily for piped water

7.5 Additional funds should be made available for gravity flow systems, use of solar/wind or energy efficient pumps, rainwater harvesting for recharge and roof-rain water harvesting, recycling or treatment of waste water

7.6 Village Water and Sanitation Committee must mobilize villagers for community-based water security planning and water quality monitoring

1. Introduction

Greening of the national rural drinking water supply programme of the Central government is an important initiative to address the ecological and environmental considerations in addition to the growth, equity and sustainability priorities already enshrined in the National Drinking Water Programme Guidelines that provide a Policy direction.

This study is a desk based review of programmes and guidelines of Rural Drinking Water Supply, as part of a larger initiative by the UNDP India Programme to support a “greening” review of all programmes of MoRD and MoWS at the behest of the Minister incharge of both Ministries. The desk based review was done in April-May and key findings presented in an international workshop held in Delhi on the 15th May 2012. This report has been prepared based on a wide range of consultations. The list of people contacted and who gave their valuable inputs into the report and in the recommendations, is listed in Annex 1.

The report contains a case study based practical analysis of contemporary problems and opportunities in the rural water supply sector and the guidelines of the flagship national rural drinking water supply programme. The report is not an exhaustive document detailing out each step of what needs to be done or a detailed analysis of each problem and its solution. The report is aimed at providing a good grasp of the key aspects of the national rural water supply programme guidelines, an analysis of the aims and means outlined in the document and of

lessons learnt from some practical projects that have tried to address critical issues. Given that the rural drinking water supply programme has till date primarily focussed on augmenting rural water supply, there are very few instances of "green" initiatives in rural drinking water.

The recommendations of this study address the following environmental/greening aspects;

- Source Sustainability in
  - qualitative aspects(chemical and bacteriological contamination) and
  - quantitative(flow). Where measures are taken to protect and enhance source sustainability
- Resource use efficiency issues in pumping water for rural drinking supply.

The recommendations will hopefully contribute to identifying greener options for the Rs.10,500 crore/yr outlays of rural water supply programme.

Review of the National Rural Drinking Water Programme(NRDWP) Guidelines

1. **Implementation challenges for the NRDWP**
2. **Best Practices in "greening" rural drinking water supply programmes**
3. **Practical Examples of Greening of Rural Water Supply**

I am grateful to the support and intellectual inputs of all the practitioners and experts who provided critical inputs and suggestions(**Annex 2**). To Srinivasan Iyer at UNDP and to all other staff for their critical comments and suggestions and all other support.

2. Greening Rural Development: Rural Water Supply

Rural water supply programmes have increased the reach of safe drinking water supply. From village level coverage to habitation level coverage, rural water supply has expanded significantly. Eradication of guinea worm and setting of minimum norms of 40lpcd of water per capita, have long guided the rural water supply schemes that have moved from hand pumps to piped water supply.

The NRDWP 2010 guidelines are ambitious in the aim of moving beyond the quantitative minimum water supply standards(from minimum litres per capita per day norms supply to non quantified water security for all ambition). However this is happening at a time when there is massive slippage reported in rural water supply, with more and more "partially covered" villages emerging and the coverage of rural water supply slipping from 96% to 69% in 2010.

The national flagship rural drinking water programme has passed through many phases of reform. The NRDWP guidelines 2010 mention that the national rural drinking water programme is the fourth phase of the central government initiative. Starting with the Accelerated Rural Water Supply Programme(ARWSP) of the 1972-86, the launching of the Technology Mission in 1986-87 renamed as Rajiv Gandhi National Drinking Water Mission(1991-92), and the Sector Reforms of Swajaldhara(2002). The NRDWP(2010) represents the fourth phase the centrally sponsored rural water supply programme of India, with sustainability(quality and quantity of water) as its core focus.

Principles : Greening of rural water supply

Rural drinking water supply has so far been seen as a basic needs programme with the aim of delivering a minimum level of potable drinking water to all. Till the mid 1970s, having atleast one functional open dug well, was considered a measure of water security at the village level. With the advent of modern technology, hand pumps and pipelines were considered to provide safe potable quality of water as compared to an open dugwell. Bore wells and reliance on ground water based irrigation also assumed significance from the early 1980s. Greening of rural water supply assumes significance from here. The 3 year drought of 1985-87, was a major disaster in terms of crop productivity and massive deaths of livestock from fodder shortage, but drinking water was not such a problem for livestock and humans. However with the pumping out of groundwater in the 1990s, there is drinking water shortages every year and tanker based drinking water supply is now made for villages in north and south India almost every summer on a large scale.

Greening of rural water supply includes two critical components;

- **Conservation and regeneration of resource** base(ground water)
- **Reduction of water wastage and energy conservation**

Since water encompasses a large domain of ministerial oversight in Government of India and the limited mandate of this Paper, the actions suggested in this greening framework are specific to Ministry of Water Supply and Sanitation only.

Conservation and regeneration of resource

India has a wide variation in rainfall patterns and water use. Conservation of ground water assumes importance given that nearly two thirds of India is arid or semi arid. However there are areas of rising ground water and water logging where this does not apply.

Conservation and regeneration refers to both qualitative and quantitative aspects of rural water supply. Emergence of Flouride is partly a factor of excessive extraction of ground water.

In the arid and semi arid areas of India, rural drinking water supply schemes must focus on conservation of ground water use. It has been reported in some areas of central India where deep aquifers are accessed by piped water supply schemes to supply water to villages under Swajaldhara like schemes. These are expensive piped water supply schemes that mine ground water and the source dries up in a few years. Then some other source is identified for accessing drinking water. Reliance on ground water should be on unconfined aquifers to the extent possible, and not on confined aquifers.

In areas with higher rainfall and spring water ground water may not be exploited. In this context, resource base consists of the hills and forests. Spring sources need to be conserved not only by afforestation and watershed management interventions, but also by relying on stream flows in the downstream valleys and using them to augment water needs of habitations, instead of relying on spring waters, will conserve and use water resources more effectively.

Identifying good source of ground water in or near a village and earmarking it for use for drinking water of the habitation/village and undertaking measures to augment its water recharge – is another aspect of water conservation and use.

Rainwater harvesting for household drinking water as well as community infiltration tanks, has been an old and tested means of water security. Investments made at household level for water conservation are essential to reduce reliance on ground water.

Reduction of water wastage and energy conservation

Broken pipelines and taps not fitted with closure knobs are responsible for wastage of precious rural water supply in semi arid and arid areas. There are remnants of dilapidated large pipeline based water supply systems in Kutch and Rajasthan in the last few decades, bearing testimony to not only wasted investments but also precious water losses.

Reliance on external water supply also implies investment and energy consumed in pipelines and transmission of water by applying pressure. This is evident in urban water supply in cities like Bangalore that pump Cauveri water from a lower elevation to the city, more than a 100Kms away. In rural water supply, specially in multi village schemes this is evident in the large pipeline based schemes in many projects.

Any consideration for increasing water supply from pressure based piped water supply should factor in the losses possible due to poor management of the system at the district/block/village/habitation level.

Even where piped water supply is done only for a limited and fixed time during a day, water losses can occur when taps are broken or by overflow of storage tanks.

Positive features of NRDWP;

- Decentralisation: Primacy of the role of PRIs and the intention of transferring management and fiscal responsibilities to them.
- Resource management perspective: incentivize district and village water security planning. Strengthen capacity of the district planning board/Zilla Parishad and of Gram Panchayats for preparing holistic plans.
- Addressing exclusion: reaching the SC, ST and women
- Coordination between different departments and agencies

The positive green feature of NRDWP is the emphasis on sustainability, allocation of 20% funds for promoting traditional water conservation and rain water harvesting.

However certain activities of hydro fracturing clubbed under sustainability interventions need to be carefully applied as the outcome may be detrimental to source sustainability ideal.

Need for managing water demand

The NRDWP guidelines admit growing water insecurity and the need for addressing this.

- Admitting that water availability crisis will deepen, yet move away from a minimum lpcd norms to 24x7 water supply for all
- Enhancing water security at source level, and aiming at grid based district/sub district piped water supply

The NRDWP guidelines are ambitious when they make a call for "permanent water security". Yet the guidelines admit that augmenting rural drinking water supply in terms of water stress and climate change is a major challenge.

The focus on more piped water schemes and moving away from 40 litres percapita per day(lpcd) norms to an open ended service provisioning, comes at a time when the rural drinking water coverage levels in India have shown reversal in coverage level(as per lpcd norms) – manifest in slippages of rural habitations moving from fully covered to partially covered villages. *The major environmental concern stemming from the guidelines therefore is: where this additional water for piped water schemes will come from and how will source sustainability be assured alongwith increasing the supply of water.*

Typology of rural drinking water supply in India consists of:

- Traditional water harvesting sources/systems.
- Roof rain water harvesting (for remote habitations).
- Shallow (dug) wells. Sanitary wells as described in the PRADAN case study.
- Hand pumps (ensure groundwater recharge and planning based on actual measurement of resource capacity).
- Borewells/tubewells (with solar pumps or more efficient pumps) based single and multiple village water schemes
- River based water supply networks(Narmada canal based rural water supply in Gujarat, Indira Gandhi Canal Project Rajasthan)
- Water supplied in tanker trucks in some rural areas in summer months

Environmentally speaking, traditional water harvesting systems, roof rain water harvesting, handpumps and safe and protected shallow wells all have a commitment to prioritisation local and sustainable use of water - these provide the most "green" option for rural drinking water supply, as against deep borewell and river based rural water supply schemes.

While evaluating the environmental impact of river based drinking water supply systems, the energy consumed in building canals and pipelines based water supply from river based systems is not taken into account.

However the focus of the NRDWP guidelines is more on larger grid based piped water supply networks, and not on prioritising local water source based drinking water supply.

3. Environmental analysis of rural water supply programme

The evolution of the national rural drinking water supply programme and its environmental analysis can be done for the four distinct phases:

- Emphasis on increasing coverage with deep drilled hand pumps under ARWSP(1972-86)
- Mission mode approach followed under the RGNDWM(1986) with stress on water quality, appropriate technology.
- Demand based rural water supply: Sector reforms and Swajaldhara in 1999
- Sustainability and quality emphasis of NRDWP 2010

The first phase of increasing coverage was undertaken when bore well based pumping technology was being introduced in India alongwith the green revolution. While safe drinking water eradicated Guinea worm and reduced diarrheal morbidity significantly, it came at an environmental cost of depleting ground water levels and emergence of salinity, Fluoride and Arsenic contamination of drinking water. National norms of rural water supply were adopted and these included a commitment to ensuring 40lpcd, one hand pump serving 250 people and a maximum distance of 1.5Kms or 100 vertical metres of distance from the handpump.

The Mission mode in 1986 galvanised the achievement of safe drinking water as a national goal.

The nodal department at central level was charged with the mandate of guiding the states and devising programme schemes to support appropriate technology, systems and trained manpower to achieve the goal of drinking water for all. More financial resources were allocated for rural water supply. The expected environmental impact of this phase was anticipated in terms of better monitoring to ensure source sustainability, checking worsening ground water quality and capacity development of government staff to address environmental issues alongiwth water security. Unfortunately the anticipated environmental outcomes did not materialise. Ground water depletion crisis worsened.

In order to push for higher service level standards of piped water supply, an innovative demand lead sector reform programme Swajaldhara(pilot project of World Bank called Swajal), was launched by government of India in 1999. Community ownership and maintenance, increase service level of 24x7 rural water supply in single and multi village piped water supply based schemes with 90% central subsidy was undertaken. The anticipated positive environmental impact of this programme was expected to result in reduction of wastage and enhanced appreciation of water conservation and use. Only a limited success was achieved. Instances of ambitious and expensive piped water supply schemes designed that could not be paid for in terms of operation and maintenance, were reported in several places. Adequate community organisation and engagement was missing to ensure demand lead sustainable projects.

Electricity bills and maintenance of motors and pipes – emerged as a major issue and negated the investments made in many expensive schemes and projects in Karnataka[1] and several other states in India. Except for Maharashtra, no other state reported a majority of their Swajaldhara schemes breaking even and operating after more than 5 years.

The National Rural Drinking Water Programme 2010 Guidelines are progressive in their commitment to addressing issues of access, equity, quality, source and systems sustainability. The challenge is implementation of these guidelines on the ground for "green outcomes".

Budget allocation of NRDWP and its "green import"

The NRDWP guidelines provide for the following programme funds allocation at the state level:

- 45% funding for increasing coverage
- 20% for water quality
- 20% for sustainability
- 10% for operation and maintenance
- 5% for support activities

The high allocation for increasing coverage, explains the increasing environmental stress of rural water supply. The budget support for sustainability element, is one very specific greening commitment of NRDWP. This has been explained in detail later in this section.

The budget head of water quality, represents a recognition to the growing problem of water quality, often induced as a result of reckless mining of water. Mitigating water quality stress can often lead to more piped water supply engineering solutions and less reliance on environmentally safe means of alternative drinking water security. More and more money can be spent on expensive treatment and piped based water supply projects, as has been witnessed in the expensive piped water schemes proposed in Arsenic affected Balllia district of UP.

Water Quality

Water quality remains a major challenge in the drinking water programme. The NRDWP guidelines mention the need for adopting the 2004 National Rural Drinking Water Monitoring and Surveillance Programme approach. The NRDWP guidelines mention the need for "all drinking water sources to be tested twice a year for chemical contamination". This is a lofty ideal, however given the poor progress of the 2004 water quality surveillance where the water testing kits and training has not resulted in regular monitoring of water, it will require a major effort if all water sources(not just the government hand pumps) are to be tested twice a year. Water quality challenges are;

- Bacteriological water contamination
- Contamination from Flouride and Arsenic

[1] ASHWAS Report: Arghyam Survey of Water and Sanitation Karnataka 2008-09

- Industrial waste and agriculture based ground water contamination

A UNICEF study of water quality in select states of India in 2008 found a high contamination of ground water from Microbiological as well as Chemical contamination. UP and Assam had more than 90% of the drinking water sources tested randomly reporting E Coli contamination. Bihar at 84%, Jharkhand and Orissa at 69% each and even Tamil Nadu with a relatively more developed rural water supply had 70% E Coli contamination of its drinking water sources. Flouride contamination was as high as 81% in Tamil Nadu, 93% in Bihar, 64% in Rajasthan and 61% in Jharkhand.

Water testing laboratories at the sub division level are also mentioned in the NRDWP guidelines. Again the experience so far, specially in areas with Arsenic and Fluoride contamination has been of water testing not being done by the existing laboratories.

Till the time that these new laboratories are in place, some emergency interim arrangements and water testing protocol was needed in the NRDWP guidelines given that water is so fundamental to life.

In the place of profit making private agencies, NGOs and charities with experience in working on rural drinking water supply, can be shortlisted through competitive bidding for operating good quality drinking water testing laboratories are Block or District level, to undertake random sampling of rural drinking water sources. Their work can be monitored by government run colleges/universities supported by the Ministry(MOWS). Till the time that the government laboratories are in place to undertake water testing twice a year for each rural drinking water source.

Source sustainability

Slippage of fully covered villages(with drinking water access) has been a major problem in India. This resulted in the rural drinking water coverage figure in 2010 falling to 69% from 96% reported a year earlier. Hence the NRDWP guidelines prioritise protection of sources of water - springs and wells.

The guidelines provide for 20% of the funds for source sustainability. As per the NRDWP guidelines " 20% allocation for sustainability-swajaldhara is on a 100% central share basis to be used exclusively to achieve drinking water security by providing specific sustainability components for source and systems with major emphasis on tribal areas, water quality affected areas, dark and grey areas as specified by CGWB...". This is a welcome shift from the erstwhile Swajaldhara scheme, with 20% of the rural water supply budget allocation, for promoting demand based rural water supply schemes with 90% central government subsidy.

However in order to protect and sustain the source of drinking water, a larger unit area of water catchment and command may need to be addressed, not just the immediate catchment of one or more drinking water sources in a village/habitation. Funding for which will not be enough from the MoWS 20% budget for this head.

Drinking water security therefore needs to be a part of the overall water security(covering all water uses). The NRDWP is supporting the preparation of village and district water security plans, with this aim in mind. After 2 years of the release of NRDWP guidelines[2], few comprehensive water security mapping has been done. MoWS is working with WSP to develop pilot mapping projects in different typologies/parts of the country.

So far there has been a limited success in generating village and district water security plans that are done through a process of community lead mapping of groundwater aquifers and surface flows to identify a menu of priority water sources and options for different uses of water for all purposes in a village. Aggregation at block and district level of demand and supply that is not just an aggregation of village level water sources planning, still needs to be done.

Work done by Sehjeevan Trust in Kutch Gujarat has demonstrated that with peoples involvement and knowledge, it is easily possible to identify zones in a village where good ground water potential exists and also mapped. Managing demand and use of scarce water is also possible to map out and plan if there is sufficient community involvement and the rural water supply scheme is not supply driven.

Unless a similar approach is undertaken, merely relying on technical mapping of groundwater potential and planning for augmenting water supply will not help.

[2] NRDWP guidelines released on 23rd Aug 2010

4. Best Practices in Greening Rural Water Supply Programme

Rural drinking water supply programme has till date primarily focussed on augmenting rural water supply. People also demand instant solutions to water shortages. Droughts and excessive ground water withdrawal has resulted in increasing pressure on limited water resources and technical solutions. Tanker supplies and water trains now provide rural water supply in many rural parts of the country. A lack of enabling policy environment has contributed to the erosion of community control over water resources and their management. There therefore are very few instances of "green" initiatives in rural drinking water.

The recommendations of this study address the following environmental/greening aspects;

- Source Sustainability in
  - qualitative aspects(chemical and bacteriological contamination) and
  - quantitative(flow). Where measures are taken to protect and enhance source sustainability
- Resource use efficiency issues in pumping water for rural drinking supply.

3.1 Water source sustainability interventions

Drinking water source sustainability is a part of the larger water use and sustainable livelihoods. Comprehensive water management planning at the level of a village or a watershed, is a key to drinking water source security. This means looking at all water sources – surface and sub surface water.

The best case study where a comprehensive water management planning has been done is the Hirve Bazar in Maharashtra, see reference below.[3]

Other examples include;

- Sehjeevan-WASMO peoples water science based rural drinking water systems,
- Maharashtra's Groundwater Survey and Development agency(GSDA) work on traditional and modern recharge of aquifers

[3] http://www.cised.org/wp-content/uploads/equity-in-watershed-development-case-study-hivre-bazar.pdf

What is important to note here is the mapping of all types of water requirement in a village, planning the use of this water and limiting the extraction of water through crop planning. Hence this is different from a narrow focus on source sustainability as advocated in the NRDWP guidelines. The Pani Panchayat work of Salunkhe in Maharashtra had in the 1980s demonstrated the mutually shared benefits of controlled groundwater extraction resulting in sustainable water yields including drinking water, for everyone all the year round.

Technological solutions to ground water recharge including blasting and fissuring, underground dams to check base flows – are engineering options that can disrupt natural flows and destroy what limited potential of water harvesting may exist. They may also succeed in augmenting ground water but its implications need to be assessed carefully.

3.2 Community based natural resource management augmenting drinking water supply

Watershed development contributes to augmentation of aquifers, however this depends on various factors, soil permeability varies a great deal, recharge may happen elsewhere from where conservation is taking place. However, along with watershed management, controlling water demand is also required. Some successful watershed development projects in India suffer from drinking water shortages on account of intensive extraction of conserved water for livelihoods and livestock.

Traditional rain water harvesting structures of Rajasthan have already received wide attention thanks to the work of Mr. Anupam Mishra. Unfortunately few traditional water harvesting structures are being revived. More and more common pool resources and water bodies are being encroached. Tankas, the smaller household rain water conservation storage is being used as piped water storage tanks in some places.

There are a few examples of rural water supply projects in tribal areas in forest lands where community involvement in protection of forest resources, development of gravity based piped water supply systems and controlling water use is the basis of water management.

- Foundation for Ecological Security(FES) and Gram Vikas, both in Orissa – have demonstrated

effective community based sustainable rural water supply systems.

- Gram Vikas has an integral sanitation component alongwith piped water supply from dug wells in forest lands, as part of household piped water supply systems.
- FES has mountain spring waters in Alumni rich hills of Koraput, as the chief source of their drinking water supply and irrigation systems. Sikkim government under its spring regeneration has demonstrated the effectiveness of spring based drinking water security.[4]
- Himmotthan Society in Uttrakhand has gravity flow based water supply in more than a 100 villages.

Conservation of water on the hills through water recharge measures, protection of green by social control over cutting of forest, keeping the water catchment area clean from human and animal intervention - is an integral part of the gravity flow based water supply systems that have been successfully providing drinking water in many tribal areas of India.

In the eastern and western ghat areas where the mountain elevations are not extreme, a longer term sanitation and drinking water security may require shifting focus from spring based gravity flow systems to stream based water treatment and pumping systems. The first step in this will be to conserve and promote perennial stream flows in the hilly regions. Piped sanitation and water connections from gravity flow systems may not be sufficient to meet household requirements. Gram Vikas model is based on pumping of ground water from forest catchment wells. Building big water sumps to store water high up on the hills is not practical and will disturb the eco system. As the need for water of the downstream villages increases, there will be a need for sanitation related water requirements as well. In some areas with enough spring water flows, Diversion Based Irrigation(DBI) systems can be extended for providing drinking water as well. However it may be better to start planning for sump based harvesting of the stream water flows in the valleys, for meeting drinking water and sanitation needs of communities in the future. Water quality will then become a major challenge given surface water flows and contamination from the surface flows. This can be addressed by micro water treatment.

3.3 Decentralized systems sustainability that impact on efficiency and conservation of water

Efficient rural water supply systems that are under prudent community management, can contribute to water conservation. Single village based rural water supply schemes in place of multi village schemes, tend to be more successful in ensuring both source sustainability and meeting the needs of the community. Well maintained hand pumps also ensure that more and more hand pumps are not needed and contamination of ground water does not take place from poorly maintained pumps.

- Well based drinking water supply in villages of Jharkhand and West Bengal(PRADAN) and Gujarat(Utthan) are good examples of community managed sustainable drinking water supply scheme.
- Community based Hand pump maintenance in UP(UNICEF) highlights the benefits of both resource conservation and water quality.

4 Case Studies: Examples of Greening Interventions in Rural Water Supply

4.1 Solar Pump energised drinking water supply: Sahjeevan Trust, Kutch

High energy costs of pumping water are often the root cause of unsustainable piped water supply systems in most part of the country. In a recent study of Karnataka rural drinking water(ASHWAS study by Arghyam, Bangalore), it was found that all the village piped water supply schemes have huge unpaid electricity bills. In many other parts of the country, it is also found that electricity supply remains erratic and connections to rural habitations get disconnected when farmers do not pay bills for their irrigation pump sets..

Photo voltaic cells based Solar Pumps have been successfully promoted by Sahjeevan Trust as cost effective and locally managed technology for not only water pumps but also for lighting and a host of local livelihoods applications, in the difficult terrain of Kutch.

[4] http://www.sikkimsprings.org/

The technology of solar pumps is linked to the concept of every village becoming self reliant in meeting its drinking water needs and operate and manage all technologies for drinking water management and distribution. Groundwater recharge became a key component of the initiative. Each village identified the best drinking water source that could yield them assured water throughout the year and took steps to protect it and use it for meeting their drinking water needs.

Using the subsidy offered for procuring PV solar panels and through a partnership with Auroville Renewable Energy, Sahjeevan Trust was able to initiate work in 2001 in a few villages in Kutch district of Gujarat.

In this process the village water security plans of the NRDWP guidelines 2010 were automatically met and also translated into action in delivery drinking water security.

Solar pumps have been able to replace the costly diesel pumps and to take care of electricity supply failures in rural areas as well;

A small 0.75HP solar pump set can replace 10HP diesel pumpsets to provide enough energy to lift water from a bore wells. The pilot project of Sahjeevan Trust demonstrated a solar powered submersible 0.75HP pump lifting water from 30 metres suction head, transported over a distance of 1.8Km PVC pipeline to the village over a gradient of 14 metres from the well to the water tank in the village.

The solar technology pump has the following components;

- Solar module panels of 1800Wp
- A 0.75HP pump
- Inverter

The economic viability of the solar pump is based on the low operating cost with no fuel as compared to a diesel pump set. Estimate of financial viability of the first soalr pumpset set up by Sahjeevan Trust shows a monthly lifecycle cost of Solar pump at Rs.26.00 as compared to Rs.58.00 for the diesel pumpset. This translates into a low Rs.3/month per household towards O&M of solar pumpsets. Even this money goes to cover the part time wages of a person employed from the village to operate the solar pump. The technology does depend heavily on subsidy from the government to provide PV cell panels to operate the pump.

4.2 Diversion Based Irrigation/Drinking Water Supply: FES, Orissa

In the hilly slopes of Eastern Ghats of Orissa, potential for using spring water flows for irrigation and drinking water requirements of the tribal habitation is being utilised as a green solution to sustainable drinking water security. Foundation for Ecological Security(FES) has demonstrated a scaled up programme of Diversion Based Irrigation and Drinking Water supply in Koraput district of Orissa.

Diversion based gravity channels for spring waters

Diversion channel based irrigation is a traditional system of diverting runoff water and delayed flows from the main flow line to the cultivable lands through arrangement of channels on contours. This system is more popular in tribal areas where the topography is highly undulating and it is difficult to lift water to the higher elevation lands. a temporary barrier made out of stones and mud against small or medium streams. Water is diverted from main flow to their lands through channels excavated on contour.

The project has implemented five schemes covering a total command area of 56.55ha benefitting 209 households. Irrigation channels 5Km long were created costing approx. Rs.20lakhs. It should be noted that these schemes provide virtually free drinking water supply to all the villages. Enabling provisions for the success of

Diversion Based Irrigation-Drinking water supply schemes are;

- Protected spring catchment areas
- Year round spring flows
- Community managed and maintained diversions channels
- Community water standposts

Hilly terrain of western and eastern ghats provide an ideal location for this technology. While spring water are naturally filtered safe drinking water sources from nature, their water yields may not be enough to sustain a higher level of water use for sanitation. Building bigger tanks high up on the hill slopes, to store water for sanitation and water requirements may not be possible and the construction may risk the spring water yields.

Hence there is a need to develop stream based drinking water and sanitation infrastructure in the eastern and western Ghats. Ensuring stream flows is a key to sustainability of this. Water from the streams can be tapped in storage tanks/sumps along the stream bed in the valleys, for supply to the habitations for their sanitation and drinking water needs and transported upstream using pumpsets including solar pumps as demonstrated by Sahjeevan Trust. Water purification and treatment measures will need to be installed.

4.3 Dug Well based water supply: PRADAN, Jharkhand.

Dug wells have been the traditional source of rural drinking water. Each village had atleast one or more dug wells and these were maintained by the village community. However with the onset of hand pumps, the use of and maintenance of open dug wells, got neglected. Many wells were closed or became waste dumps.

With the bore well based piped water supply proving unreliable and expensive in many parts of the country, with the emergence of fluoride and arsenic in ground water – interest in reclaiming dugwells and making them clean and secure for drinking water, is gaining ground.

Dug wells are an environmentally green option for extracting drinking water. Many NGOs from western to eastern parts of the country, find dug wells a reliable local water source in place of expensive borewell or multi village piped water supply schemes. The bore wells operate as community water source and are fitted with storage tanks and pipes for transporting water to an overhead tank in the village for gravity flow to households. PRADAN has promoted well based drinking water supply in Jharkhand and West Bengal.

PRADAN has successfully demonstrated 20 well based drinking water supply schemes in Jharkhand, using the funds available from rural water supply programme and peoples own contributions. All the schemes are managed by the community, including recovery of)&M expenditure. The Village Water and Sanitation Committees have been activated, Standard Operation Procedures developed and the entire work from selection of the point for a well alongside a stream, laying of pipeline and location of overhead tank and distribution pipe network – has been carried out by the VWSC. A cash contribution of Rs.1000/family is secured upfront(in 3 installments) from all households in the village. Each household contributes Rs.80 per month for the assured piped drinking water supply in their homes. Some other positive features of this initiative include – atleast 50% members of the VWSC are women, there is fortnightly cleaning of the water storage tank and there is focus on sanitation and behavior change work to promote toilet usage.

The highlight of this initiative is that this is a single village piped water supply solution and this ensures that from installation to operation and maintenance – the entire work is carried out by the VWSC working under the panchayat. Unlike multi village piped water supply schemes where the installation and management of the water supply remains in the hands of the PHED or Rural Development departments.

4.4 Mitigating Arsenic in drinking water: Innervoice Foundation, Balia, UP

Arsenic in ground water has emerged as a major problem all along the Indo Ganjetic plains. It affects some of the poorest populations of India whose resistance to Arsenic poisoning is low. The problem is compounded by the decades of assurance that ground water from deeper aquifers drawn from hand pumps and borewells is safe drinking water. Govt of India has recently approved the setting up of an Arsenic Centre in West Bengal to address the problem.

In a research paper on Arsenic in ground water in West Bengal, Dr. Dipankar Chakravorty found "Till to-date, we have analyzed by FI-HG-AAS 1,10,000 hand tube well water samples from 9 arsenic affected districts. Out of them, 51% are unsafe to drink according to the WHO recommended value of arsenic in drinking water (10 mg/L). In our preliminary study, 95000 people were clinically examined from arsenic affected districts of West Bengal and 10100 people (9.4% including 2% children) were registered with arsenical skin lesions. At least 100 cancer and few hundreds suspected Bowens disease were detected. Approximately 90% of the children below 11 years, living in arsenic affected villages show elevated level of arsenic in hair and nails. Infants and children might be at greater risk from arsenic toxicity due to more water consumption on body weight basis. Villagers are using arsenic contaminated water not only for drinking and cooking but also in agricultural field. Our study during last two years reveals the presence of elevated level of inorganic arsenic in food chain and in those consumer products where groundwater is used in affected villages. To combat this deadly arsenic menace we need to increase awareness and educate our villagers about the problem and instead of reckless use of groundwater we should preferably utilize our vast available surface water, rain water with people's participation".[5]

The first intervention in addressing the problem of Arsenic therefore is raising awareness about the problem in the affected areas as well as strengthening the diagnostic capacity of public and private health systems. People still do not know that the painful ulcers and bone deformities and Cancer, are a result of the water that they are drinking.

In the district of Balia in UP bordering UP-Bihar on the river Ganga, a small initiative in Balia district is trying to address the problem of Arsenic in ground water, using community awareness and mobilisation as a key approach. The small peoples initiative has the following lessons;

- *Lack of awareness the key to addressing Arsenic in drinking water*.There is a large scale lack of awareness and apathy among both the affected populations as well as the private and public health systems and doctors on the presence of and risk of life threatening cancer from consuming Arsenic affected water.
    - IEC component of the rural drinking water supply programmes have not addressed this critical issue and this must be done on priority.
    - Engagement of schools and universities in awareness raising on Arsenic in ground water is needed
    - Formal education component in school curricula and training of school teachers, Anganwadi workers and ASHA workers, Panchayat functionaries – on the nature of Arsenic contamination and its testing will help a great deal.
- *District level water quality testing laboratories are currently dysfunctional and need to be activated for arsenic testing.*
    - Field kits distributed under the 2004 Water Quality Surveillance programme are also not functional and cannot test for Arsenic. Need to popularize water quality testing.
    - Making the laboratories user friendly. District laboratories should be encouraged to test any sample given to them by anyone from the community. A very nominal fee if any should be charged.
    - Schedule of testing, dissemination of results and awareness raising should all be combined together in the water testing intervention. Otherwise testing of water and not disseminating its results may not help.
    - Monitoring of the results should be done at the district level in all reviews by he Collector.

[5] Paper presented at the Fifth International conference on Arsenic and its health effects. http://phys4.harvard.edu/~wilson/arsenic/countries/SDAbstractsSPEAKERS.pdf

- *Dug wells are one alternative to Arsenic affected ground water* that is drawn from deeper aquifers by hand pumps and bore wells. Instead of going in for large expensive multi village water treatment based piped water supply schemes, there is need for sustainable village level drinking water supply options.
- *Recharge of ground water leads to a significant reduction on Arsenic*. In Balia water samples having 1000ppm of Arsenic, with simple recharge measures for ground water, resulted in drinkable quality of drinking water.
- *Creation of new community dug wells for drinking water and for revival and recharge of old functional wells, their regular cleaning* - can be done from NREGA works.
    - Ground water recharge needed – that will reduce arsenic effect in the ground water and make water from wells safe for drinking. Roof rainwater and surface water can be used to recharge the ground water and wells.
    - Collective action at panchayat level is needed.
    - Involvement of schools and universities in IEC and water testing
    - Awareness of arsenic in school education needed – seen as a contagious disease. Formal education and exposure.
- *The experience of many types of Arsenic filter treatment plants has not been encouraging. Filters:* The filters do not completely remove Arsenic, these are often eternally procured, costly and difficult to clean and replace. Safe disposal of Arsenic sludge/filters is a major concern. Often the Filters breeds complacency and people keep using the water after the life of the filter has ceased or when the filter stops working. The experience of Innervoice Foundation with cheap Charcoal-Sand based Matka Filters is positive since these are small filters using locally available filter materials, these are cheap and easy to maintain. However Innervoice Foundation also believes that these filters have a risk of poor maintenance and hence a longer term solution of Arsenic free water at source is the solution. Innervoice Foundation is promotion dug wells with regular monitoring as the viable option in Balia district of UP.

IRRAD-UNICEF Workshop on Women Led Water Management, Gurgaon

http://www.smsfoundation.org/National_Conference_on_Women-led-Water_Management.htm

ACTION PLANING: In the last session of the conference, action planning was organized through formation of four groups to propose action points for the themes allotted:

Group 1 - Enabling environment for women's role in decision making
1. Women participation via awareness/sensitization to raise demand for rights, demand collectively
2. Need for media to work on changing attitudes on gender
3. Gender budgeting can help target funding to ensure prioritization
4. Role of women in marginalized communities - micro-planning can help better understand the issues
5. How—capacity building at various levels; can look at examples such as Kenya Red Cross Society; monitoring required to see progress

Group 2 - Role of civil society
1. Social mobilization of women as community mobilisers and trainers
2. Support for women's groups
3. Linkage with government and convergence at all levels

Group 3 - Role of government institutions
1. More emphasis on gender and vulnerable groups into policies
2. Divide strategies across timelines and integrated into national programs
3. Disaggregated data to be routinely collected
4. Capacity building needs identified, including gender participatory processes for government officials
5. Pilot and monitor gender-sensitive components of the programs and create opportunities for women in WASH Sector
6. Advocacy via media

Group 4 - Research needs / methodological needs
1. Need for a model for convergence at grassroots level that incorporates the gender components
2. Lack of understanding of theory of change - more rigorous documentation with gender focus

3. Women's role across all of WASH Sector including irrigation and sanitation technology
4. Lack of knowledge about gender related methodologies with standardized terminology Wrap up Session

Jane Schukoske (IRRAD) speaking from the perspective of civil society organizations observed that there are several next steps for NGOs attending the conference. First, NGOs that do not have gender policies that guide them in involving women at both programmatic and staffing levels may formulate such policies (for example, there can be percentage targets set for women's participation in programmes). Such institutional policy can help shore up greater support for gender in WASH.
Second, NGOs can arrange exposure visits to other NGOs which are effectively working with womenled WASH programmes (including the mason training and other women-led WASH construction programmes) so that staff can learn about involvement of women in planning, design, implementation and maintenance of structures. Third, WASH training programmes should be reviewed for comprehensiveness and quality. Speakers featured the importance of including all relevant curricular topics (for example, menstrual hygiene management was a topic omitted from some curricula), gender balance in selecting trainers and participants, inclusive training methods to encourage active participation by women, and the need for training at all levels (e.g., at the block,district, state and central levels), not just grassroots. Fourth, some NGOs should engage with academic institutions on participatory research (seeking research ideas from communities and sharing the research results with them), and arrange for impact analysis of their work. IRRAD has a Rural Research Center that works on both of these aspects. Fifth, the conference brought together organisations that can network in the future to share ideas for conducting policy advocacy and for future conferences. Lastly, we may think of setting up clearing houses of materials by climatic area.

Summing up remarks by Aidan Cronin (UNICEF) centered around the key discussion points emerging from the meeting—what are the key elements and processes that make up a best practice and what is required to make it scalable. How does the system ensure its rollout? India has 600,000 villages and only government can reach all of these so a key emphasis must be on scale with quality within the system. A rights-based approach is required and power dynamics must be better understood to ensure equity and gender gains. The conference had lot of insights on water but sanitation could be emphasized more in the future. There is still a big gap on the hygiene front that needs further work. Convergence of efforts of all actors as well as serious consideration of gender norms is required for monitoring needs to become stronger and disaggregated data is built up to feed evidence-based advocacy.

Anjal Prakash (SACIWaters) spoke on positive discrimination and on the need to be gender-centric. Stressing that gender rights discourse needs to go down to grassroots, he proposed a three-pronged strategy around capacity building review, research and policy advocacy, reiterating that now is the time to do, given that enough learning is available from pilots.

To mark the closing of the conference, Lalit Mohan Sharma (IRRAD) proposed a vote of thanks. He summarized the deliberations that took place during the two days and expressed that the conference had a good set of speakers who brought rich experiences from various fields at one platform. He assured that the recommendations that have come out from the action planning session will be taken forward and that there is a need to intensify efforts in promoting women-led water management.

World Bank Support to Rural Water Supply and Sanitation Projects in India: WSP Report 2012

As a part of this review of Bank-supported projects, a ***Scheme Sustainability Survey*** **was undertaken in 2010.**

This comprised a field study conducted over a sample of 75 piped water schemes across the states of Kerala, Karnataka, Maharashtra and Uttarakhand. This survey shows that 87 percent of the schemes in World Bank assisted RWSS projects are still functioning well at least three years after commissioning. Customer groups in about three-quarters of the schemes7 had a good perception of both the quantity and the reliability of the potable water services provided by the schemes. Eighty percent of the schemes provide more than 40 lpcd, even in the summer season, and a quarter of the schemes have

achieved supply levels above 70 lpcd, providing water for one to four hours daily as per the original design parameters of the scheme. The level of service provided in these schemes complies with the demand expressed by the communities and with GoI norms at the time of implementation of the respective projects. The level of service, quantity, and availability of water in the World Bank-assisted RWSS schemes observed during the field survey compares well to the results of the 2008 *Review of Effectiveness* study and to the GoI official norms of rural water access in India8.

In addition, more than 60 percent of the Bank-supported schemes surveyed as part of the *Scheme Sustainability Survey* demonstrated the ability to cover at least their operating expenses through the collection of user fees. Again, this result compares favorably to the typical 21 percent O&M cost recovery under the traditional PHED piped water supply schemes surveyed under the *Review of Effectiveness* study.

Although Bank-supported RWSS schemes have performed strongly, the *Scheme Sustainability Survey* identified a number of areas for potential improvement. These generally reflect the need for ongoing oversight of the VWSCs by the GP and/or the *Zilla Panchayat* (ZP) governments. Further technical support is necessary to continue to build the capacity of the VWSCs. Other areas for improvement that emerged from the field survey include the unreliable electricity supply reported in about half of the schemes and the water resource challenge of maintaining raw water supply of sufficient quantity and quality for the schemes throughout the year, especially in the dry months. Approximately 20 percent of the schemes surveyed receive less than 40 lpcd supply in the summer months with 5 percent receiving less than 25 lpcd. This highlights the acute crisis encountered during the drier months in some locations. Such problems however, which vary from state to state and within individual states, are not specific to the World Bank-assisted projects and are consistent with those observed throughout the country as recognized by ongoing the Ministry of Drinking Water and Sanitation (MoDWS) initiatives on the issue of water sustainability.

South Africa's Sanitation Cesspools: Toilet Apartheid

by PATRICK BOND, *Durban, South Africa.*

This week's World Toilet Summit offers an opportunity to contemplate how we curate our crap. Increasingly the calculus seems to be cash, generating contradictions ranging from local to global scales, across race, gender, generation and geography. Nowhere are they more evident than in the host city, my hometown of Durban. We've suffered an 18-year era of neoliberal-nationalist malgovernance including toilet apartheid, in the wake of more than 150 years of colonialism and straight racial-apartheid.

In central Durban, the mafia of the global water and sanitation sector – its corporate, NGO and state-bureaucratic elite – have gathered at the International Convention Centre, just a few blocks west of the Indian Ocean, into which far too much of our excrement already flows. They're at the same scene of the crime as, exactly a year ago, negotiators dithered at the United Nations COP17 'Conference of Polluters' summit.

Recall that the COP17 rebuffed anyone who fancifully hoped global elites might address the planet's main 21st century crisis. The 1%-ers inside ignored outsider demands for climate justice: make airtight commitments to 50 percent emissions cuts by 2020; drop the 'privatisation of the air' strategy known as carbon trading and offsets; and cough up 'climate debt' payments from rich to poor countries.

Instead, that conference ended with a 'Durban Platform' that re-emphasized capitalist strategies, pleasing Washington especially. The COP17 deal eroded differences in responsibility between North and South, and moreover, as lead Bank of America Merrill Lynch carbon dealer Abyd Karmali told the *Financial Times*, the Durban Platform was "like a Viagra shot for the flailing carbon markets." True, a tiny carbon price erection followed, but the effect soon wore off; the European Union Emissions Trading Scheme has been flaccid throughout 2012.

What the dog's-breakfast Durban Platform confirms, then, was global-elite back-slapping generosity to each other, simultaneous with rank incompetence and utter disregard for the poor and environment, all of which are again on display this week at the COP18 in Doha, Qatar. Precedents matter, for lowering standards.

The commodification of crap

The World Toilet Organisation's battle cry, 'Scaling up – dignity for all!', appears as a creative *talk-left but turn-the-tap-right* (i.e. off) strategy. The water mafia has long struggled to gain legitimacy for neoliberal cost-cutting strategies, and now does so by invoking dignity (and they also have tried colonising the 'water rights' discourse) – but naturally not genuine equal access and consumer affordability, neither of which are possible under neoliberalism.

Another version of this is micro-scale privatisation, where NGOs and community organisations are encouraged to build local toilets and charge poor people for their use, to cover construction, cleaning, maintenance, the water bill and a tiny salary.

Last month in Nairobi's Kibera and Huruma slums, I spent a day dodging the 'flying toilets' (plastic bags filled with faeces), thankfully guided in walkabouts by two admirable popular organisations whose young men – often drawn from ex-gang members – construct these toilets after fighting the small-scale local water capitalists who physically sabotage state suppliers. These systems of desperation-commodification, priced at US$0.10 per use (including one piece of loo paper), are vast improvements on the flying-toilet *status quo*.

This travesty is the result of a more general neoliberal dogma that hit slums like Nairobi's over the past quarter-century: cut-backs in state-subsidised water. The strong residue – both in World Bank techie talk and in populist-neoliberal micro-privatisation mode – is just as evident at the Durban Toilet Summit as it was at the World Water Forum in Marseilles nine months ago. That event reconfirmed the water-empire expansion of Paris mega-privatisers like Veolia and Suez, along with the likes of liquid-barons Coke and Nestle, all backed by the multilateral development banks.

Although for a dozen years, fierce anti-privatisation struggles have been waged in Cochabamba, Johannesburg, Accra, Argentina, Atlanta, Jakarta, Manila and many other urban water battlegrounds, it seems that recent US and European municipal fiscal crises offer a new opportunity for the water profiteers.

At the Durban summit, even more clever neoliberal stunts are being rehearsed. 'Community-Led Total Sanitation' (CLTS) popularized by NGOer Kamal Kar and academic Robert Chambers in Bangladesh passes yet more responsibilities for public hygiene downwards to poor people. The goal is to wean the lumpens off reliance upon state subsidies through social shaming.

Explains Petra Bongartz from Sussex University, "Through the tools employed by CLTS, a community comes to self-realization that their acts of open defecation are disgusting. In disgust, I have seen some people spit, others turn away from the direction of shit. Still others have vomited at the sight of shit. Disgust is one of the key elements of a CLTS trigger. Disgust is ignited by the unpleasant sight of shit, more so when the shit is still in its fresh and wet state."

State funds to supply sanitation services are invariably in short supply, so such gimmicks allow smirking Finance Ministry technocrats in many countries to both decentralize the state and shrink it, and in the process, shift duties to municipalities and vulnerable people, in a process sometimes called 'unfunded mandates'.

Durban's dirty water

In this context, Durban residents like myself are having a hard time separating good from bad arguments when it comes to water quality and sanitation. First is the rumour, fed by media hysteria, that drinking Durban's increasingly grey water is bad for us. As the city begins to mix recycled city sewage with river supply from the mercury-contaminated Inanda Dam (where signs warn local Zulu fisherfolk against eating their catch) and other E.coli-infected streams, will we end up as ill and thirsty as several unfortunate neighbouring Mpumalanga Province towns' citizens?

In many little 'dorpies' stretching from Johannesburg east through Mpumalanga to the Mozambique border at Kruger Park, Acid Mine Drainage and related toxic effluent from coal mining corporations flow prolifically. The national environment ministry turns a blind eye. Between worsening climate change, declining air quality and widespread water pollution, it is terrible but true – as even the African National Congress (ANC) government admits in obscure reports – that *apartheid's ecology was better than freedom's.*

To illustrate, at the very tip of government's free-market, fast-melting iceberg, Cyril Ramaphosa's coal company was let off the prosecutorial hook last month for operating without a water license. Ramaphosa's political clout was simply overwhelming, according to a leading Pretoria bureaucrat cited by *The Mail & Guardian.* Indeed it's likely Ramaphosa will become the country's second leader at an ANC conference in a fortnight's time, notwithstanding his smoking-email role in the Marikana massacre, carried out

by police 14 weeks ago at the behest of the multinational corporation, Lonmin, for which Ramaphosa serves as local frontman.

As for Durban's tap-water quality, no, I don't think there's any worry, and still have no qualms about ordering my restaurant water straight from the tap. Much worse is the rise of plastic bottles – see http://www.storyofbottledwater.org for gory details – which clog landfills and whose petroleum inputs soil the air in South Durban, Africa's largest refinery site.

There, children in the mainly Indian suburb of Merebank suffer the world's worst recorded asthma rate. The Malaysian-owned Engen refinery and BP/Shell's Sapref complex act like a massive pollution pincer on the kids' young lungs. Last week, even the slobs at the US Environmental Protection Agency deemed BP – 'Beyond Petroleum' (hah) – such a filthy rogue that it may no longer bid for new oil leases there.

Durban's dirty water policy

Other gossip making the rounds here concerns the world-famous water manager who runs Durban's municipal system, Neil Macleod. Billionaire philanthropist and Microsoft founder Bill Gates blogged two years ago that Macleod "has been a leader in thinking through how to improve sanitation for the poor in Durban." But last month Macleod was charged with corruption by his subordinates (whom he was investigating for the same crime).

This came just at the moment that former Durban city manager Mike Sutcliffe apparently intimidated his successor S'bu Sithole into out-of-court-settlement talks over corruption libel which may leave taxpayers shelling out as much as a million dollars to featherbed Sutcliffe's supposedly injured 'reputation'. Although the Manase Report into city corruption – from which Sithole made his claims that Sutcliffe should be jailed – remains a state secret, in both the Macleod and Sutcliffe cases, I'm convinced that they are being unfairly maligned.

How, then, might we more *fairly* malign these men, not personally of course, but for the society-corrupting, health-threatening, ecologically-destructive sanitation policies on their watch?

The most obvious evidence is the city's repeated embarrassment at reports of high E.coli and toxin levels in the rivers feeding the ocean, especially after rains, leading to the loss of international 'Blue Flag' status at ten Durban beaches four years ago. This month is vital for attracting Johannesburg tourists, so the excessive recent storms make it doubly hard for our hospitality industry, given last week's reports about unsafe beaches.

So why do long stretches of Durban's beaches become unswimmable after rains? The primary cause is Macleod's persistent failure to address the vast sanitation backlog in more than 100 shack settlements across the city. Here, Sutcliffe long refused to authorize standard municipal services – such as water mains and bulk sewage – because of their informal property-rights status, especially those near the traditionally white and Indian areas subject to forced-displacement pressure.

Most shack settlements, in which around a third of Durban's 3.5 million people live, have only a few poorly-(or un-) maintained toilets, notwithstanding heroic efforts by their main social movement, Abahlali baseMjondolo – most notably at the Kennedy Road shack settlement of 4000 residents and 8 toilets (until ruling party thuggery forced them out) – to raise the profile of the problem.

As a result of loose excrement, E.coli flows into our streams at a rate far higher than the recommended 'safe' level of 100 parts per 100ml. The 2010 *State of the Rivers Report* found the E.coli count in the "uMngeni River at Kennedy Road up to 1,080,000. Cause: Informal Community on the banks of the Palmiet River."

Power politics and toilet apartheid

Five years ago, Macleod predicted to *Science* magazine that by 2010, "everyone [would have] access to a proper toilet," while in reality, *hundreds of thousands do not, today.*

Neoliberal sanitation experts visiting Durban for the Toilet Summit may rebut that the world cannot afford 12-liter flushes for everyone, and that we must embrace some version of low-water toilets here. (I agree that low-flush bio-gas digesters could be a fine compromise, supplying cooking gas to nearby houses.)

Yet community critics regularly tell us that Durban's water-less 'Ventilated Improved Pitlatrine' (VIP) and 'Urinary Diversion' ('UD' – or 'UnDignified') strategies are failing. If the municipality possessed a genuinely green consciousness, then middle- and upper-class areas would have such pilot projects – not just tens of thousands provided in the city's low-income periphery.

I flush a few times each day and pay a small premium: more than Durban's poor can afford, but still not enough for the sake of equity. Many South African readers of this column could easily cross-subsidise their low-income

fellow residents, by paying more for the privileges of filling swimming pools and bathtubs, watering gardens, running washing machines and all the other liquid luxuries we enjoy. This is, after all, the world's most unequal major country, and it's far worse now than even during apartheid.

If those of us above the 80th percentile paid more to deter our hedonistic water consumption, and if Macleod adjusted tariffs downwards accordingly for poor people, then Durban would not be South Africa's second stingiest city for water, according to the University of the Witwatersrand Centre for Applied Legal Studies. (The worst is nearby Pietermaritzburg – both reflective of durable old-style Natal white settler-colonial mentality and latter-day Zulu managerial conservatism.)

If such logical reforms were made to water and sanitation prices, then better health and gender equity would result, and more funds could be raised for installing decent toilets across the city, as well as to repair sewage pipes whose cracks regularly infect our rivers and harbour.

After enormous herds of White Elephant infrastructure – underutilized stadiums, a fast train linking Pretoria and Joburg, and Durban's new airport – were built across SA for the 2010 World Cup, no one in power can claim that construction capability or subsidized funding are lacking. What's missing is a more favourable politics of and by the poor, and so what will continue to result is toilet-apartheid.

Patrick Bond *directs the University of KwaZulu-Natal Centre for Civil Society*

Manual Scavenging: Court Order - Wilson Bezwada

Please find the attached latest order of the Supreme Court.`

You are aware that our PIL came to hearing on 11thDecember 2012. We attended as a 10 member group including 6 Safai Karmachari Women from Haridwar. We submitted the latest report collected by our Volunteers between 5th December to 10th December 2012.

On 9th December 2012, we went to Haridwar to collect the primary report and made the final draft and submitted to our Advocate Mr.Nikhil on 10th December afternoon. The very next day (Tuesday) our team came in the morning with the remaining details. Mr.Nikhil compiled whole report and made 3 sets with the colour photos and submitted to the Judges just before hearing. By that time the whole court hall was fully packed. After looking in to the report and heard the points raised by Mr.Nikhil the two member bench was shocked and felt very angry on DM and administration of State of Uttarakhand. They showed the report to respondent counsel and raised many questions and asked DM to answer personally. Many times he failed and his answers were not satisfactory at all. After lengthy hearing, the judges warned the DM with the following words: "this is classic/blatant example for contempt, we can take action against you but by seeing you as a young person having long future, our orders will spoil your career. So we are not taking any such actions now. But we warn you if you don't follow our orders you will be punished".

I am not understanding why the learned bench cannot look in to the future of the scavengers (Petitioners) who have been forcibly engaged in this inhuman practice for the past 5 generations. This petition is about to complete a decade in SC on 3rd January 2013 and we are still fighting to prove the existence of manual scavenging only!

Of course, the petition created tremendous pressure on the whole administration across the country. The following Order passed by the honourable bench is a small but important achievement:

UPON hearing counsel the Court made the following

O R D E R

It is a case where the efforts of the Court to reach or discover the truth has been foiled by calculated attempts on the part of the officers of the State of Uttarakhand. While referring to our earlier order, we reiterate that the affidavits filed by the Patwaris were in a mechanical way without examining the true position on the field. This had compelled us to request the District Magistrate to file affidavit and obviously after verifying the facts. The District Magistrate's affidavit is patently incorrect. It is a matter of great concern for the Court to notice that such senior officers in the hierarchy of the Government,filed incorrect affidavits without personal verification, with an attempt to defeat the public interest litigation which entails to further the cause of the statutory provisions of the Act and the constitutional mandate contained under Art. 21 of the Constitution. The effort of the State in this case appears to be totally directed towards showing that petitioner has not stated correct facts before this Court rather than to discharge its obligation of putting an end to the social evil of manual scavenging, dry latrines in the District of Haridwar.

Normally, we would have taken an action against the officer under the provisions of the Contempt of Courts Act as well as for misleading the Court by filing incorrect affidavits which to his knowledge would have been relied upon by the Court while passing certain directions. Be that as it may, we would grant him another opportunity before we pass any final order in this regard.

We must notice that the petitioner has filed in Court today a detailed survey report which has been prepared for the period from 5th December to 10th December, 2012 in District Haridwar, Uttrakhand. In this District, large number of persons have been shown to be working as manual scavenger and there are large number of dry latrines, photographs to that effect have been filed with addresses. The District Magistrate who is present in Court has submitted that he has just gone to two places out of large number of places that were mentioned in the affidavit of the petitioner. Hardly any verification even in regard to these two places is correctly placed on record. All the energy was directed towards obtaining stereo affidavits from different persons to show that they are not carrying any manual scavenging works. These affidavits are either factually incorrect or do not appear to be genuine. While granting an opportunity to the District Magistrate, we cannot help but to express our anguish so that he would make a serious effort now to resolve the problem and achieve the object of removing manual scavenging in District Haridwar rather than devote his time and energy to matters which would only aggravate his conduct to prove a contemptuous behavior before the Court.

The District Magistrate shall personally visit all the places which have been stated in the Survey Report of the petitioner and ensure that all of them are corrected by removing dry latrines and by construction of flush latrines and no manual scavenging work be permitted in those areas and to take steps for their rehabilitation as per the statutory policy. He shall file affidavit of compliance. We make it clear that in the event of default, the court will be compelled to take action against this officer.

India WASH Forum Trustees

About India WASH Forum

India WASH Forum is a registered Indian Trust since 2008 with Trustees from all over India. It is a coalition of Indian organizations and individuals working on water, sanitation and hygiene. The coalition evolved out of WSSCC support to national WASH sector advocacy.

In order to undertake credible independent WASH advocacy work in India, the national coalition got registered as an Indian charity in 2008 and has undertaken a number of significant research and advocacy work that includes:

Knowledge Networking and Advocacy initiatives undertaken by India WASH Forum;

India WASH Forum

- Gender and Sanitation South Asia Workshop with National Foundation of India in Delhi; 2005
- Review of Swajaldhara and TSC Programme Guidelines; 2007
- Input to the Technical Expert Group set up to review the National Drinking Water Mission(RGNDWM); 2007
- Civil Society Input, Urban Sanitation Policy 2009
- Review of TSC in 4 states of India 2009
- Organisation of SACOSAN 3 in Delhi. CSO session and a CSO Statement of Action, 2009
- National Right to Water and Sanitation Workshop 2009 with participation from the Ministry and CSOs
- Start up of the GSF programme in India
    - Launch workshop 2009 with stakeholders in Delhi, 2009
    - Developing and finalising the Country Programme Proposal, 2010
    - Leading the PCM of GSF, as an institutional host and Chair and Convener.
    - Providing oversight for programme review.
- Member Govt of India 12th Five Year Plan Working Group on Drinking Water and Sanitation 2010. Recommendations on behaviour change priorities and staffing for national sanitation programme.
- Recommendations for Urban and Rural Water and Sanitation inputs: national consultations on drinking water and sanitation by Planning Commission Govt of India and Arghyam 2010
- National Pro poor Urban Water and Sanitation Consultation, 2010
- National report and a South Asia Report for SACOSAN 3 : Peoples Voices – a National Study project, Reports for India and South Asia, 2011
- Formal Input to the National Water Policy 2012, with a focus on drinking water and sanitation
- Report to the Ministry of Drinking Water and Sanitation: UNDP international consultation – Greening of Rural Water Supply Programme and Guidelines, 2012
- FANSA-IWF Review of national commitments and progress since Sacosan 4, and preparation for World Water Forum 2012
- School Sanitation Baseline Research by GIZ for Tirupati and Mysore, 2012

A unique feature of IWF is its non-hierarchical set up. Most of the Trustees of India WASH Forum are represented in their individual capacity and do not represent the organsiations they are associated with. The agenda and activities that India WASH Forum are determined at the initiative of the Trustees and support from organisations and individuals.

Since 2010, India WASH Forum is actively engaged in the Global Sanitation Fund(GSF) and currently hosts Programme Coordination Mechanism(PCM), of the **GSF in India.** The role of the PCM is to provide a governance oversight to the GSF Programme in India. The Programme is being implemented by an Executing Agency called Natural Resources Management Consultancy(NRMC) that makes NGO sub grants in the two states of Jharkhand and Assam. The Programme is managed directly from WSSCC Geneva and with the support of the PCM and an Auditor(called the Country Programme Monitor) that is KPMG for India.

The mandate/charter of India WASH Forum is Hygiene and Health outcomes from sanitation and water;

- **Promoting knowledge generation** through research and documentation which is linked to and supported grassroots action in the water-sanitation-hygiene sectors. Special emphasis is given **to sector-specific and cross-cutting thematic learnings.**
- **Supporting field-based NGOs and networks in their technical and programmatic work.** The IWF would also consistently highlight gender and pro-poor considerations, and provide a national platform for interest groups working in the sector to come together.
- **Undertaking policy advocacy and influence** work through
    - Monitoring and evaluations
    - Media advocacy and campaigns, and
    - Fact finding missions
- **Undertaking lobbying and networking to promote common objectives** in the sector.

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