Training report on workshops conducted in Uttar Pradesh

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This is a report on workshops conducted for village community members (PRIs, Village Water and Sanitation Committees (VWSCs), Angandwadi workers and other community members) in 4 different villages in Meerut district of Uttar Pradesh. The objective was to brief and create an understanding of the need to prepare Village Water Security Plans. The focus of these workshops was on the preparation of village water budget as the starting point for preparing the Village Water Security Plans.

The preparation of village water security plans by the village communities has been made mandatory under the new DDWS guidelines issued in 2009 under the NRDWP (Sustainability) component. The PRIs or the Village Water and Sanitation Committees are responsible for village water supply schemes from planning and implementation to managing O & M and finances. Recharging drinking water sources is the main component under this programme to ensure sustainability of water resources and to prevent water supply schemes from slipping back.

Location: The workshops were conducted in four different villages of Meerut district in Uttar Pradesh, in the Indo-Gangetic plains. Meerut is the second largest mega-city of state in terms of population. In the past few decades, water demand in the district has rapidly increased with the growing population. Groundwater has become the major source of water. However, due to the unregulated extraction, the water tables have fallen drastically. Groundwater decline details (Block-wise)

Village	Block	Ground water annual decline rate (in cm)
Jalaluddinpur Masoodpur Gawri	Rajpura	1-10
Khatki,	Parikshatgarh	1-10

Source – Ground water department (UP, 1996-2007)

Poor water quality and safe disposal of wastewater are the major challenges facing the people of the region.

Mode of work: CSE collaborated with the NGO Janhit Foundation, based in Meerut to undertake these workshops. Janhit has been working for the past 13 years directly with

village communities on promoting organic farming, groundwater quality & protection of river water quality and environment education issues in Uttar Pradesh.

The villages were selected based on physiography, population profile and water quality affected area. Three out of the four villages selected were situated near the Kali River and have their groundwater sources recharged through the river. The Kali River is contaminated by industrial wastes and untreated sewage coming from the nearby cities of Muzzafarnagar and Meerut. Groundwater contamination of industrial effluents is a major cause of concern for the health of the people. Agriculture is entirely dependent on groundwater resulting in the rapid lowering of the water tables.

Janhit members interacted with community members for participation in these workshops and also conducted sessions. Participants consisted of panchayat officials, Village Water and Sanitation Committee (VWSC) members, Anganwadi members and other community members.

Elements of the workshop: The workshops were consisted of the following broad elements:
Trend analysis to get an understanding of causes for water availability and demand (decreases/increases), water quality etc.

1. Trend analysis to get an understanding of causes for water availability decline/increase in demand;
2. Prioritising problems according to urgency in finding solutions;
3. Mapping of water resources;
4. Assessing water demand and availability;
5. Identifying actions to ensure water sustainability.

Name of village	Description	Location
Atrara village (Kharkhada block):	The handpumps is consider main drinking water source of entire village almost each households has separate handpump, however 20-30% have not working properly and most of them has dried-up in summer. As well as waste water disposal is a main	Situated in the Gangetic plain.

	concern of the area.	
Jalaluddinpur Masoodpur Gawri, Rajpura block	Almost 100 Government and private handpumps has exist in village and almost 35 is not working properly, the waste water disposal is a main concern of entire village.	Situated in the Gangetic plain.
Khatki, Parikshatgarh block	Mixed population. Drinking water supply from handpumps,	Situated in the Gangetic plain.
Khwajampur Majra, Rohata block	Almost 85 handpumps is existed in the village including 15 Government, 80% is provide water but the quality is doubtful. The waste water disposal is a main concern of entire village.	Situated in the Gangetic plain.

Summary of workshops:

1. Atrara village (Kharkhada block): Atrara village is located on the banks of Kali River. Agriculture is the main source of livelihood for the people with 75% households having agricultural land and remaining 25% households are landless who work as labourers. The total households in the village are 1317 with population of 6870*.

The trend analysis revealed::

1. Extraction of groundwater through tubewells has replaced use of water from dugwells and river for irrigation.
2. Indigenous wheat has been replaced by the hybrid wheat which is more water intensive.
3. Encroachment of common lands has led to disappearance of ponds and even dugwells.
4. Ponds are being used as dumpsites for waste.
5. Groundwater quality has declined due to pollution from the river Kali.

People said that 25 years ago the water quality was very good and today, groundwater is saline and yellow in colour and there is a rise in skin and gastro-related diseases among the people. In 1980, the waters of the river Kali was fit for bathing whereas today the water is acidic due to industrial effluents.

Although there has been a decline in water levels, from 20 feet 30 years back to 60 feet today. However, there is no sense of alarm and people are not aware of the need for recharging. On the other hand, there is also a decline in rainfall, particularly a drop in the winter rainfall. Participants said that earlier, the rainy season was spread over 4 months including winter rains. Today, winter rains have completely disappeared. Handpumps have been in use for many years, even before the government installed handpumps for drinking water. There are 38 government and about 1300 individual-owned hand pumps in the village of which about 25% have completely dried up. These handpumps are used both for agriculture as well as for drinking water.

Based on people's perception, disposal of the wastewater was a major problem. With the liberal use of groundwater, more wastewater gets generated. The drains carrying waste water have nowhere to go and there is no treatment system in place. The only pond that exists in the village is used to receive the water from the drains. But all houses are not connected to this pond.

The participants calculated the water demand for the total households (based on the numbers of persons, livestock etc), and the total amount of water available (based on annual average rainfall and the total land area (habitation).

2. Jalaluddinpur Masoodpur Gawri, Rajpura block: The second workshop was organized in Jalaluddinpur Masoodpur Gawri in Rajpura block. This village is also very close to the River Kali. Agriculture is the main occupation of the people in the village with almost 95% households having agricultural land while the remaining 5% households are landless and they work as labourers. The total village strength is almost 158 households with population of approximately 794* of which about 50 households are dalits.

Trend analysis by the participants showed that the village is highly dependent on ground water for fulfilling their domestic and agricultural needs. Wells and pond water for irrigation has been replaced by the hand-pumps, tube-wells and submersibles. Water quality is a major problem with water showing high levels of TDS, iron and bacteriological contamination. Water level has declined from about 15-20 feet in the 1970s to about 60-70

feet today. There are about 20 tubewells in the village and for drinking purposes, hand-pumps are considered more reliable. There are about 70 handpumps, both government and private, in the village. Although groundwater is declining, people do not think of recharging the groundwater and there is no awareness about rainwater harvesting.

Forty years ago, the river Kali was clean and people used the river water for drinking as well as irrigation. Earlier, the river used to flood regularly and the village is to be inundated. But today, the water in the river has only the effluents.

The general perception is that of declining rainfall pattern. There is practically no winter rains and even the monsoon rains has declined. The encroachment of land for agricultural purposes has meant the wiping out of grazing lands and the per capita cattle has declined from 5-6 animals to 3-4 today.

As in Atrara, the villagers do not know how to address the problem of wastewater. Indiscriminate filling up of lands has prevented the natural flow of water towards the talabs which would otherwise be used as a receptacle for waste.

The participants calculated the water demand of the total households (based on the numbers of persons, livestock etc), and the total amount of water available (based on annual average rainfall and the total land area (habitation). The conclusion was that there is a huge potential to raise groundwater levels, dilute contamination by undertaking rainwater harvesting.

3. Khatki, Parikshatgarh block: The third workshop was organized in village Khatki. Agriculture is the main occupation of the people in the village with almost 85% households having agricultural land. On an average one person from each family has migrated to the city in search of livelihood. The population of the village is about 6500 from about 600 households, of which about 4500-5000 people reside in the village while the others have migrated to other places.

Trend analysis by the participants depicts a change in the rainfall pattern over the past two decades. Kharif crop which was entirely rainfed has now become heavily groundwater dependent. In 1970, there were 7 dugwells for drinking purposes and 10-12 for irrigation and today none exist. People have turned to handpumps and submersibles as their preferred choice of water. There are about 70 tubewells and about 1000 handpumps, including 30

installed by the government. Forty years ago, there were four ponds (*talabs*) in existence which were used for irrigation and animals. Today there are 3 ponds which are in a bad shape and act as recipient of waste water from the houses of the village. More than 70% of the village has *pucca* bathrooms.

Participants also said that there is a definite decline in the rainfall. Earlier, summer rainfall was spread over 4 months with at least 30 days of continuous rainfall. Today, this has been reduced to a mere 2 months.

The water budget calculations were undertaken that showed that there was a big potential for harvesting rainwater from the village. People of this village showed interest in undertaking rain water harvesting even at their own cost. They also wanted to know how to treat wastewater and protect their ponds.

4. Khwajampur Majra, Rohata block: The fourth workshop was organized in Khwajampur Majra. Agriculture is the main occupation of the people in the village with almost 90% households having agricultural land. The total number of households is 292 with population of approximate 1325** only.

Trend analysis shows a decline in the groundwater levels from 15 feet to 40 feet. There were about 10 dugwells in the 1970s, of which only 1 remains in the village and there are 2 more outside the panchayat limits. The dugwells and the ponds have been closed down and filled up so that the land can be used. There were about 5 borewells in the 1970s going down to 40 feet whereas there are about 40 tubewells today going down to 120 feet. Handpumps were first installed by the villagers themselves and today there are about 80 private handpumps and about 10-15 government handpumps. About 80% of the handpumps are functional but people are doubtful about the quality of water.

The rainfall pattern is also in decline. In the 1970s there was rain for 4 months in the year, including one month of winter rains. Today, there is rain for about 15 days -1 month in the monsoons.

Water quality is a major issue and water samples that were taken from the village were yellow in colour. More than 50% households have pucca bathrooms. There are 50 latrines, 30 latrines with soak pit and 20 with septic tanks. Wastewater is led through open drains to talabs.

The water budget calculation was done by the participants. Participants showed a willingness to construct rooftop water harvesting systems in places with pucca roofs.

Learning from the workshops:

1. Groundwater depletion is a silent killer in the region. Groundwater extraction has become the ay of life and because the area is in the Indo-Gangetic plains, even with the declining water levels, people do not feel the pinch. The decline is from 15 feet to 70 -100 feet, but water is still available and therefore people do not have a sense of the water crisis that is palpable in dry areas. Therefore, the idea of rainwater harvesting is a strange, alien idea to the people, who are not linking the fact of declining rainfall, decline in the groundwater levels, decline and contamination of water in the river Kali and the increasing contamination of groundwater. This is even as they were able to establish a clear declining trend in the rainfall pattern with the number of rainy days and amount of rainfall decreasing.

There is an urgent need for strategies for recharging in the region, given the fact that this is the granary of the country. Declining groundwater levels will directly impact on the food security of the country as a whole. Moreover this is a region that is also not a difficult area in terms of recharging technologies. What is needed is an urgently prioritized strategy to enable recharging at least equal to if not more than water that is extracted.

2. The second looming crisis is that of wastewater management. The wasteful use of water that is seemingly plentiful has resulted in the generation of substantial wastewater in all the villages. Village citizens now perceive talabs and ponds as the natural receptacle for wastewater. If any of the ponds have not been encroached for agricultural purposes, they are used to dump waste. The constant refrain in all the villages was “Show us a way to dispose of the wastewater.”

Given the fact, that the Department of Drinking Water & Sanitation is envisaging 100% coverage of all rural households with piped water, this is the time to think of addressing the wastewater. Not after we have turned the villages of India into stinking cesspools. Therefore, treating wastewater has to become a part of the job of supplying piped water.

3. The third major issue is that of water quality. The Kali river flows very near the villages where the workshops were conducted. Kali river is extremely polluted from industrial and domestic effluents from Meerut. Water quality studies conducted by NGOs show the

presence of high levels of toxic heavy metals and other contaminants. This has affected the groundwater quality also. Community members in all 4 villages spoke of increasing incidences of health problems ranging from stomach and skin ailments to neurological problems. In this fertile region that forms the backbone of agricultural productivity in the country, it is necessary to maintain the quality of groundwater and take preventive steps to prevent toxic contamination.

*census 2001

**census 2011

Village Jalalpur, safe drinking water has major concern

Village’s pond, dose not has any option for waste water disposal

A village water pond, encroached by nearby habitation

Annexure

List of participants

Training Workshop – 1 Date: 27th March, 2011		Training Workshop – 2 Date: 28th March,2011
Venue: Gram Panchayat Bhawan, *Village: Atrara* *Block – Kharkhoda*		*Village: Jalaluddinpur Masoodpur Gawri,* *Block – Rajpura*
S. No	Name	Name
1	Devendar Singh	Jaiveer
2	Kamal Singh	Rohtash Singh
3	Hariram Tyagi	Tejveer Singh
4	Charan Singh Sharma	Ranjan
5	Mohd Hanif	Veer Sen
6	Mohd Irshad	Tarachand
7	Mohd Juned	Tejpal Singh
8	Nizammudin	Arun Kumar
9	Ajay Kumar Sharma	Mahipal
10	Sunder	Mangal Sen
11	Rajaram	Urmila Devi
12	Mohd Younis	Ravinder Kumar
13	Mohd Nizam	Parmood
14	Mohd Yasin	Neelam
15	Rajpal Tyagi	Rajender
16	Hukam Singh	Suresh Pal
17	Mohd Istiyaq	Inder pal (Gram Pradhan)
18	Angad Tyagi	Teekaram
19	Shukardhan Tyagi	Kheem Chand
20	Vinay Tyagi	Prataap
21	Jitender	Mahesh Kumar (former Gram Pradhan)
22	Omprkash Tyagi	Manoj Koshik (ex- LMC member)

23	Rajkumar Tyagi	Rajpal Singh
24		Kheem Chand
25		Bhule Singh
26		Neelam Singh
27		Ankur Koshik
28		Suresh Pal
29		Karan Singh
30		Jayanand Shrma
31		Mukesh Kumar
32		Mehkar Singh
33		Gajraaj
34		Chtar Sen
35		Brajapal Singh
36		Rohtash Singh
37		Shashi (ANM)
38		Chatar Sen
39		Vishpal
40		Firoz Praveen (Aangan Vadi Worker)

Training Workshop – 3 Date: 29th March,2011		Training Workshop – Date: 30th March, 2011
Village: Khatki, *Block – Parikshtgarh*		*Venue: Junior High School,* *Village: Khwajampur Majra,* *Block – Rohata*
S. No	Name	Name
1	Bimla (ASHA)	Venit Kumar
2	Nilam (ASHA)	Sanju Kumar Sharma
3	Shilpi Sharma (Aangan Vadi Worker)	Jagdish
4	Munesh Sharma (Aangan Vadi Worker)	Anuj
5	Punam Sharma (Aangan Vadi Worker)	Pavan Kumar
6	Manjush (Aangan Vadi Worker)	Vijay
7	Aanju	Sumant parsad
8	Sant Giri	Rajveer
9	Devender Giri	Sonu

10	Rishipal Giri (Gram Pradhan)	Rohit
11	Yogesh Giri	Venit
12	Titu Giri	Niten
13	Munna Laal Seni	Nishu
14	Jagveer Singh	Mumtaz Ali
15	Ch. Pavan Kumar	Gopal
16	Ramdas Singh Jatva	Inder
17	Ramjas Jatva	Sushil
18	Netram Parjapati	Bhagirath Singh
19	Jetender Kumar	Mohd Hanif
20	Chandrpal Singh	Mohd Asgar
21	Pavan Kumar	Gaffar Ali
22	Harender Singh	Sohan Lal
23	Amar Singh	Pardeep Kumar
24	Dinesh Kumar	Mohan Lal
25	Rajveer Singh	Shivkumar Sharma
26	Ram Kumar	Sohan Lal
27	Prem Pal	Aslam
28	Rajbal Singh	Jaypal Singh
29	Jasvant Singh	Jayprakash
30	Sunita (Aangan Vadi Worker)	Santosh (Aangan Vadi Worker)
31	Ram	Manmohan Sharma
32		Rajpal Raghv
33		Barjpal
34		Ajeet
35		Phool Singh
36		Jograj
37		Sudher Gupta
38		Ramesh
39		Hariram Tyagi
40		Mangt Singh
41		Raja Ram
42		Ashok Kumar (Gram Pardhan)