

CASE STUDY: Sensitizing Community on Judicious Use of Water

Context

The Gangetic plains, which is a fertile plain, chiefly an agrarian zone with high population density and low per capita farm land holding¹, resulting in to a mounting pressure on natural resources, including water. A water intensive cropping pattern has evolved and adopted by farming community in the region over decades of research and introduction of improved high yielding crops and varieties, to meet the food demand and economic well-being of farming households. Major cropped area is under high water demanding crops like wheat, sugarcane, vegetables and pepper mint (for menthol). Major source of irrigation is tube-well², but there is also network of irrigation canal at some of the locations. Most of the tube-wells are electrified but due to erratic power supply, farmers generally keep a back-up of diesel engine to run the tube-wells. Since availability of water is plenty and energy is not a limiting factor, with no cost attached to water as it is, the use of water in agriculture and for day-to-day domestic course and agriculture irrigation is more than liberal and with almost no recycling of waste / used water.

Surface water, which is abundant, especially during rainy months(170 cm in hilly areas to 84 cm in Western U.P), which also create flood situation sometimes, is generally given very limited importance for storage for use in irrigation or ground water recharge by community. Natural water bodies are shrinking and gradually disappearing due to inhabitation pressure¹. New ponds constructed under various government schemes during recent period mostly remain unfilled or partially filled even during best of monsoon. This is probably due to poor design or wrong location of these ponds which fails to tap the rain water through natural collecting drains¹.

Overall, the sensitivity of community towards water use and water productivity across the plains is very low. With strong belief of individual ownership on ground water, it is considered as a commodity, which is free of cost and never lasting resource, promoting indiscriminate and mindless application of water, especially in agriculture. It is also traded among community as irrigation water selling by 'haves' to 'have-nots' is common.

¹Population and land holding data of UP

²U.P. Development Report Volume 2 Planning Commission Government of India; 2007

Background Information

In 10 districts of Eastern Uttar Pradesh, HUF has initiated a program on 'Water for Public good' in partnership with PANI (People's Action for National Integration) as project implementing agency (PIA), which in turn involves 10 grass root NGO sub-partners of PANI for ground implementation of project. Program commenced in November 2014 with the prime goals to improve water productivity and alleviating poverty of 26500 small and marginal farming household by promoting water efficient and sustainable agriculture

practices amongst farming community. This project has been appropriately designed to layer the water component over an on-going agro based livelihood program FASAL, under implementation at the same locations.

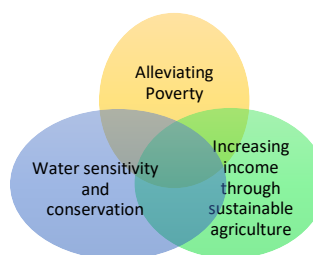


Figure 1: Project Objectives

Strategies

In the beginning of the intervention for sensitizing the community towards prudent usage of water, it was gathered that not only was the knowledge base and awareness on water conservation very limited, but the subject understanding was also extremely erratic. It was thus decided to create a common baseline- a collectivization of the targeted farmer groups so that the planned mediations could be exercised effectively.



It was understood that creating an understanding of water conservation would be legible if broken down into usage categories- water for domestic usage, drinking water and water used for agricultural practices.

Activities Planned

- Recycling of used domestically used water
- Appropriate use of drinking water to enable least wastage
- Use of alternative farming techniques(like drip irrigation or bed sowing) to facilitate lesser water

Involvement of several stakeholders across verticals is encouraged and facilitated to facilitate knowledge, resources and technology to create an actionable impact in the intervention. Apart from existing bodies of support, it was also envisaged to build capacity and leadership within the community by installing Community Resource Persons (CRPs), lead farmers as well as Bare Foot experts to initiate and encourage community level activities.

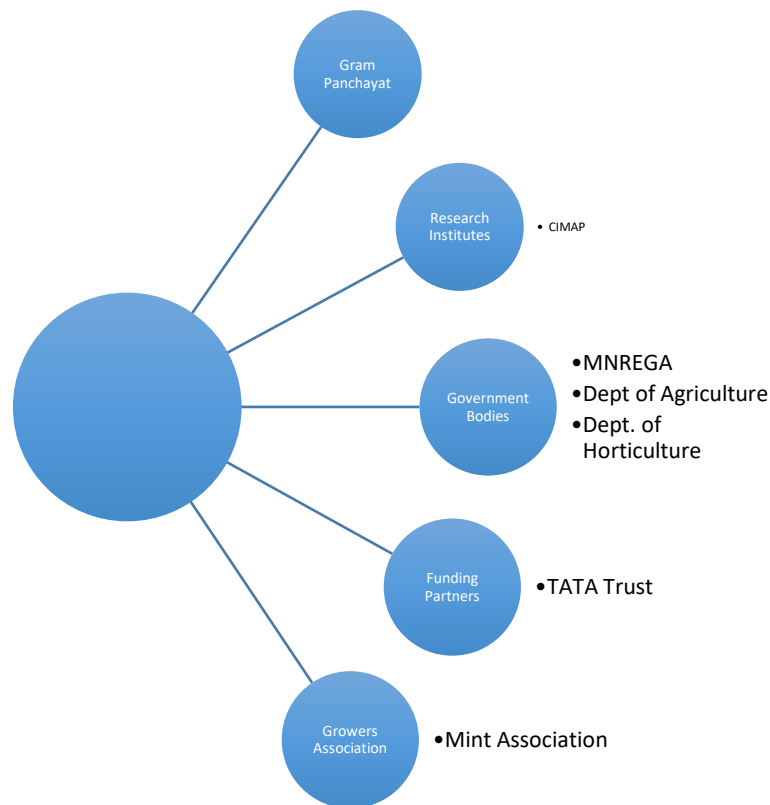


Figure 2: Stakeholders for Intervention

Implementation

Considering the relative nascence around the issue, a lot of scope, opportunity as well as necessity for innovation was felt to promote judicious use of water. It was also perceived that the innovation designs would primarily have to emerge from the existing practices, at least to ensure early stage feasibility and acceptance. For instance, it was observed that water used in domestic environment would be dumped into drainage making up for a considerable percentage of water consumption. Thus, innovation around recycling this water for kitchen garden was devised to make optimum use of domestically consumed water.

Further, innovation was also designed by encouraging a collective approach in the community to promote shared responsibility and engagement for monitoring of water consumption through public sources. The community itself took responsibility for exercising monitory checks on usage of hand pumps, open wells or other sources of water. Additionally, all sensitization and advocacy was engaged in collectively to create community belongingness. Video screening on awareness on the issue, compulsive monthly meeting involving water conservation as a part of the agenda is some of the group activities designed to encourage co-participation.

The implementation of the strategies was done in the most inclusive, relevant and feasible manner to encourage behaviour change in the community. Although a relatively new



Meena Devi from Maholi cultivated Paddy, Wheat and Sugarcane on her 2.5 acre field from the past few years. Last year she cultivated paddy and wheat on 0.5 acre field, investing Rs.8200.00 and managed 1.9 tons of crop production (A profit of Rs.26600.00). This involved 52.5 hours of irrigation through 10 HP pump set which bore at a depth of 100 fit and valve depth at 10 fit. Thus after 2 crop cultivation and heavy cost labour and water investment her net profit in a year was Rs.18400.00.

As a result of the intervention, this year, she decided to cultivate Pigeon pea with intensification technique. With an investment of Rs.4775.00, she harvested 0.6 tons of production and a total profit of Rs.48000.00. Irrigation employed only 5.5 hours with same pump and bore, thus increasing her net profit to Rs.43225.00. In comparison from paddy-wheat, she got additional profit of Rs.24825.00 and saved 47 hours irrigation.

The various scopes of intervention include verticals of :-

- Capacity Building
- Demo Models
- Consumption and Waste Mapping
- Educational Videos
- Cropping Systems- that encourage water consumption

intervention that may not necessarily be perceived as an urgent need by the community, it has been noted that the community is willing and active on the subject of water conservation.

Challenges and Concerns

For a subject that has not been engaged in extensively in the chosen districts of Uttar Pradesh, the intervention has brought new learnings and challenges with it.

The most evident point of concern has been that so far, need for water conservation has never been experienced as a subject of attention. Neither has appreciable control been exercised on water consumption but its wastage has been completely ignored in all dimensions. The base of knowledge and awareness for water conservation lacking, understanding and acceptance of the idea of using less water is hard to digest for the community that has been showing evident reluctance in laconic (optimal) irrigation for the fear of crop loss. Considering that the interventions are primarily based on collective efforts, political, social and economic divide in the community has been creating a hindrance in the collectivization process.

It has also been noted that the community is reluctant in cultivating certain suggested cropping systems (like pigeon pea) for the fear of crop damage by wild animals like blue bull.

Behaviour Change: A collective challenge

Since the intervention focuses on behaviour change, the counter-productive behaviour of non-participating community members is a cause of de-motivation. Even within the consenting members of the community, diverse Political, social and economic orientations could lead to conflicts. It also a matter of concern that in Gram Panchayats that have unstable or unpredictable political environment, decisions and actions that are deterrent to water conservation is a high possibility.

Post-Intervention Situation- The Outcome

The intervention has begun to exhibit evident changes as emerging during the post-intervention analysis that can be broken down into the following categories:

Economical

- The intervention has led to savings in irrigation cost (tube-well operating cost- by fuelled engines) Amidst the 120 Gram Panchayats of intervention, a total of over 57 thousand hours' worth of tube well operation have been reduced. This invariably led to lesser labour cost and fuel cost for operation.
- Since the interventions in agricultural practiced are based on the principle of enhancing production with reduction in investment, an evident increase in income due to production increment is also observed. Over 1000 farmers adopted water efficient cropping system (Pigeon Pea and Sesbania)

QUICK FACTS-

- 10411 persons have started some form of practice for judicious use of water
- 0.09 MCM water has been recycled because of the intervention
- 8.62 MCM of water has been saved due to various judicious practices

Social

- The community has started taking collective actions due to several interventions of advocacy, knowledge enhancement and capacity building as group activities. Instances where water conservation was brought up as agenda in group meetings has risen considerably(1176 in a month)
- The community has started talking about water as critical natural resource, sharing responsibility and encouraging co-participation. Water monitoring for over 200 open

water sources has been initiated and more than 2000 community members have become actively involved in water monitoring.



Figure 3: Alternative practices for water conservation

Lessons learned

During the period of intervention, pertinent lessons have been learned that will help with the way forward on the issue. With appropriate sensitization, water recycling is possible at household and individual level. For this mobilization, water level monitoring by community and video screening is concluded to be a very effective in its reach and effect (190673 farmers have seen videos related to water conservation during the period of intervention). Apart from these, capacity building of the resource persons (CRPs and Barefoot Experts) within the community itself have been helpful in mobilizing the community by setting believable examples to follow. A prevalent challenge has also helped to give insight for future interventions that Despite government orders, rules, provisions, acts etc., PRIs are still not aware and sensitive to the issues of water management.