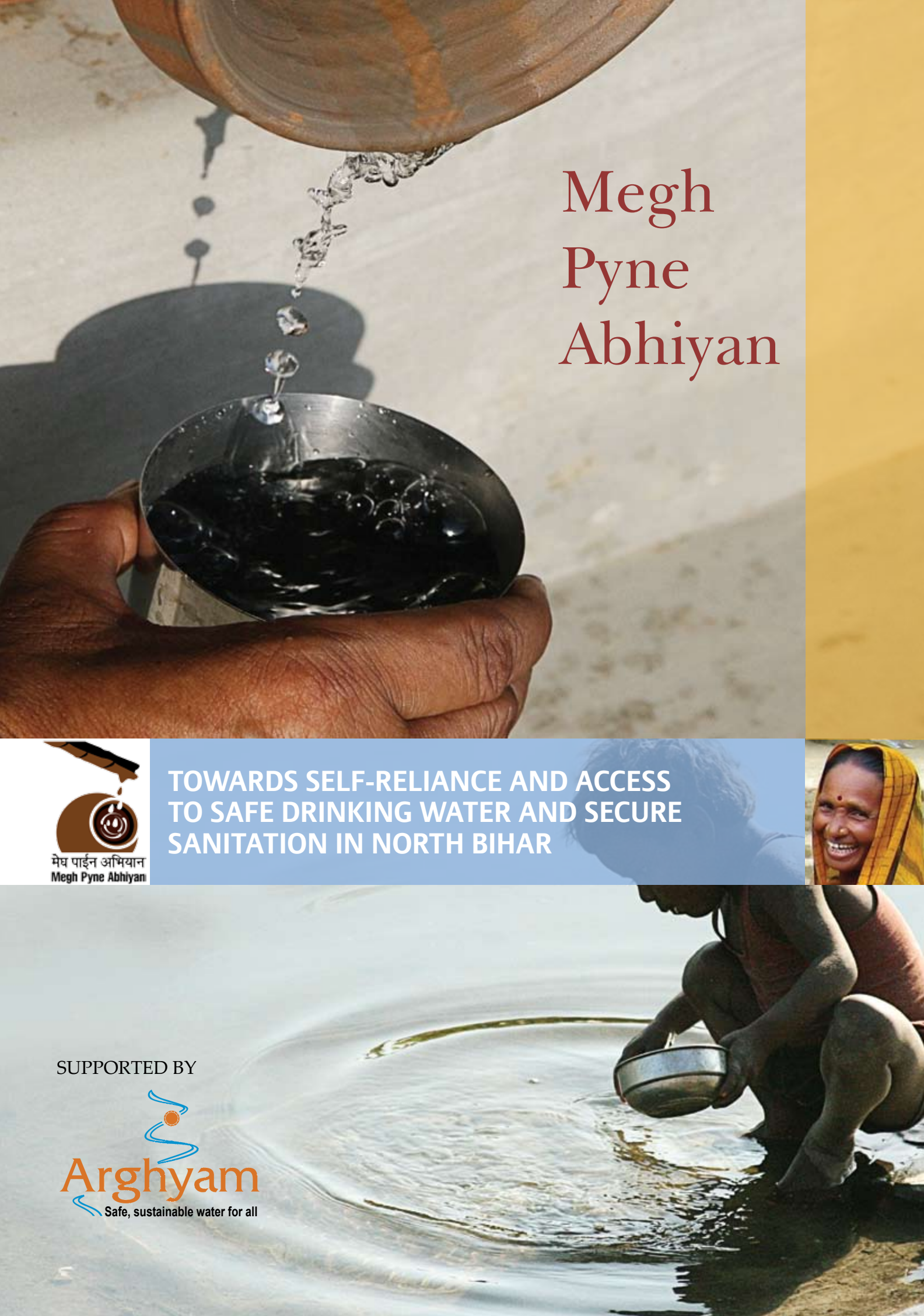


Megh Pyne Abhiyan



TOWARDS SELF-RELIANCE AND ACCESS
TO SAFE DRINKING WATER AND SECURE
SANITATION IN NORTH BIHAR

SUPPORTED BY





Megh Pyne Abhiyan's motivation is to construct a congenial social environment through sustainable technological innovations and adaptation of conventional wisdom in order to ensure a shared, sustainable and effective management of water. However, much beyond that, the wider belief is to stimulate collective action and accountability towards a 'common good' amongst the local habitants for grassroots cooperation, through

- Developing community based practices for challenging the present trend of dependence on external sources and proposing an alternative approach of self-reliance
- Instigating a behavioural change of rural communities with regards to common property resources and institutions, building self management as an attitude towards local problems.
- Building a critical mass of human resources for dealing with the local problems and in executing need based interventions while aiming at innovations.

Megh Pyne Abhiyan towards self-reliance and access to safe drinking water and secure sanitation in North Bihar, 2011

Authored by Chitra Gopalakrishnan, Luisa Cortesi and Eklavya Prasad

Supported by: Arghyam, Bengaluru

Designed & Produced by: Mind's Eye Communications

Photographs: Luisa Cortesi and Eklavya Prasad





Megh Pyne Abhiyan's endeavours would not have been possible without the people and communities living in the plains of northern Bihar. It is their resilience and wisdom in confronting and adapting to the willful ways of the rains and rivers during the monsoons that has induced and spurred our involvement. They will always remain our inspiration and reason for commitment.

We have to make special mention of the individual women and men who are encouraging changes in current water and sanitation systems, attitudes and practices by providing alternative norms to their communities. Among those, the forty eight people who devote their everyday to invigorate the campaign, and the five partner organizations who give us space, courage and support to carry on with our journey.

We would also like to express our thanks to *Arghyam*. The challenges involved in supporting the concept of MPA in north Bihar and forging ties with new local groups and individuals to shape the campaign neither deterred nor intimidated *Arghyam*. Its members have been unstinting in their encouragement and guidance through the campaign phases, and in both happy and challenging times. Had it not been for its consistent support since 2006, in all probability, MPA would have remained a concept.

We appreciate the contributions of our resource groups - *Advanced Center for Water Resources Development and Management (ACWADAM)*, Pune; *Biome Solutions*, Bangalore; *PRADAN*, Gaya and New Delhi; *Development Alternatives*, New Delhi; *Department of Environment and Water Management, A N College, Patna*; *Owner Driven Rehabilitation Collaborative, Patna*; and *Samaj Pragati Sahyog, Dewas*, in equipping the campaign with multiple skill sets.

Last but not the least, the role of resource individuals – S.Vishwanath, Himanshu Kulkarni, Siddharth Patil, Anil Verma, Padmaja Nair, Lata Iyer, Alka Palrecha, Pushkar Jha, Satyajit Mallick in facilitating campaign's progression in thoughts, comprehension scope, ability and impact demands a special mention.

Eklavya Prasad
Luisa Cortesi



Contents

Introduction	5	Section 3	
Section 1		Megh Pyne Abhiyan: Activity Spiral	
Overview of North Bihar: A Thirst Zone in Floodplains		CHAPTER FIVE	29
CHAPTER ONE	7	Rainwater harvesting: The start of Megh Pyne Abhiyan's water journey	
North Bihar: Trapped in a flux of floods and fallacies		CHAPTER SIX	36
CHAPTER TWO	12	Dug-wells, water testing and indigenous water filters for clean and adequate drinking water	
People's plight: During the deluge and its aftermath		CHAPTER SEVEN	50
Section 2		Innovations for sensible land and water economics	
Megh Pyne Abhiyan Aims, Approach, Structure and Allies		Section 4	
CHAPTER THREE	17	Finding our Way	
Megh Pyne Abhiyan: A crossover in perspective and approach		CHAPTER EIGHT	54
CHAPTER FOUR	22	Over the water sanitation and livelihood crisis	
Megh Pyne Abhiyan allies: Unique amalgam, unique agenda			



1



2



3



4



5



6



7



8

This volume aims to capture the impetus behind *Megh Pyne Abhiyan* (MPA) as well as its successes and challenges.

To put the campaign's motives and efforts in 22 *panchayats* in five flood-prone districts of north Bihar (Supaul, Saharsa, Khagaria, Madhubani and West Champaran) into perspective, the book begins with an overview of the region's problems. While the first part of section one looks at the setbacks that floods cause and how its management has exacerbated the crisis and deepened poverty levels, the second part looks at the human suffering floods entail with regard to drinking water, sanitation and agriculture.

Beginning mid June with regard to drinking water, sanitation and agriculture and lasting till September (even October in some years), the average of 1,200 millimetres (mm) of rainfall that drains out of the skies every year and cause rivers to break their banks. Chapter one highlights how large scale embankments have invalidated the local way of coping with the endemic floods, which was to simply allow the flood waters to disperse over large tracts and drain over time.

The greatest irony in this region is that though rivers overflow and the lands are saturated with water during monsoons, there is a severe shortage of drinking water. The hand pumps sunk by the government to remedy the drinking water crisis in the region have not been of help. During the floods they submerge or are silted beyond remedy while during the dry months, when they are functional, by drinking the water they pump there is danger of imbibing high levels of iron, arsenic (in certain areas), and ammonia and often falling prey to bacteriological contamination. Yet, the government figures say 77 per cent of north Bihar depends on them for 'safe' drinking water.

The second chapter of section one elaborates the colossal human tragedy that follows the monsoons. Thousands of people perish every year along with their livestock, crops ripe for harvest go under water, vast swathes of

land remain water-logged for months, villages remain cut off for long periods of time, and epidemics break out. The areas in north Bihar worst affected by the monsoon flooding and rivers running amok are the poorest, with among the largest rural populations in the country. The figures of the World Commission on Dams underline 56.5 per cent of India's flood affected people are from Bihar, 76 per cent of who live in north Bihar alone.

The section underscores how by missing the full import of community management of natural resources, and by disallowing people from managing their drinking water needs in a sustainable manner, the government has intensified the crisis, poverty and stymied solutions.

Section two of the volume chalks out how *Megh Pyne Abhiyan*, literally cloud's water campaign, begun in 2006, uses this very precept - putting the ignored problems - as its starting point. The section details how MPA uses long-term planning of sustainable water management as its initial plank for ecological, economic and social regeneration. MPA aims, approach, organisational structure and allies are discussed in depth

Capturing the raindrop to address drinking water needs that turn critical during floods, was MPAs first intervention in the region. The concept was unknown and unorthodox in this region but rich in potential. MPA began with this and co-opted a cycle of mutually dependent and intersecting water issues into its activity ambit.

They include: access to clean drinking water during floods through rainwater harvesting; revival, upkeep and construction of flood resistant dug-wells; introduction of locally made sustainable water filters; encouraging innovative methods for water storage; assessing groundwater contamination; testing water quality; discussing health problems resulting from water; reviving forgotten practices of ensuring clean water; encouraging

management of water at the community level; introduction of alternative sanitation system and the introduction of a new method of paddy cultivation - System of Root Intensification (SRI) – a method of growing summer paddy with higher yields using less water, seeds and fertilizer; and ecological sanitation.

Section three, the heart of this volume, aims to capture MPA forays into each of these operational areas in depth and show the need for tying them into a circle of continuum. It highlights the success stories, how MPA has overcome resistance to its initiatives, and its efforts to become a point of reference for an alternate model of development. It talks of MPAs innovations, its attempts to document the traditional water management practices, and struggles to anticipate emerging threats. It also gathers oral testimonies of people in the region, recording their response to the campaign.

Divided into three chapters, the first is a comprehensive look into rainwater initiatives of MPA. It looks at the progress district wise and substantiates progress with figures of

usage patterns. It explains how MPAs field representatives have overcome resistance and succeeded in making rainwater usage an accepted practice. The second chapter deals with three connected issues – revival of dugwells (district wise), water testing, and the introduction of local water filters – that MPA addresses together to ensure water security. It provides an update in each area, juxtaposing it with progress details, case studies, facts and figures and people's opinions. The last chapter looks at the innovations that MPA is experimenting with and looks at System of Root Intensification, a new way to grow paddy using less water, and eco sanitation.

And finally in Section four, the volume takes a look at MPAs successes and good practices as well as the areas of concern and shortcomings, acknowledging the missing links. MPA is entering a phase now where there are many more dots that need to be connected; the campaign is aware of that and is trying to bridge the gaps; its belief that vision is seeing the invisible is what keeps it going.

The volume takes a look at MPAs successes and good practices as well as the areas of concern and shortcomings, acknowledging the missing links



section

Overview Of North Bihar: A Thirst Zone In Floodplains

- THE SECTION LOOKS AT SETBACKS AND HUMAN SUFFERING CAUSED BY FLOODS AND THE FALLOUTS OF EXISTING FLOOD MANAGEMENT PRACTICES

TRAPPED in a flux of floods and fallacies

An intense, tyrannical April sun beats down on the expanse of rice, wheat, maize, sunflower and sugarcane fields that dot northern Bihar's 5.4 million hectares. The ripened crops crackle as febrile winds rush past their stalks and over those trying to harvest them. Lush lines of papaya, jackfruit, coconut, banana, palm, guava, *paan*, *supari*, *kadam* and mango trees yearn for reprieve that will only come with the shadows of the evening.

The only cool confines in these searing surroundings are in the vicinity of the eight rivers that crisscross these plains and drown into the Ganga. The energy of the Ghagra, Gandak, Burhi Gandak, Bagmati, Kamala, Bhutahi Balan, Kosi and Mahananda is mild and infused with an almost yogic calm.

River systems and districts of north Bihar

There is also tranquility in the many ponds where lilac water hyacinths peek shyly over large buffalo herds cooling in the waters. And, within myriad water-logged pools where farmers grow *makhana*, the water plant relished for its seed. Deep green, lotus-like leaves that are spread across silent, limpid waters speak of restfulness.

Yet all of these little patches of peace are ominous reminders of a soon-to-emerge waterscape where hectare upon hectare will be pulled under the 1,200 millimetres (mm) of rainfall that empties out of the skies unevenly and unpredictably. Fierce rainfall such as this makes this "region the most affected by floods"

Rivers overflow, cut paths, change course, and deposit huge amounts of silt, clogging and choking the land. The intensity, severity, frequency and duration of rainfall in the districts vary and so does the amounts of silt that rivers deposit





Source: Rorabacher, J.A, Gerrymandering, Poverty and Flooding: A Perennial Story of Bihar, Economic and Political Weekly, February 16, 2008

as the National Commission on Floods (1980) says.

As the skies open up every year in end June, the raindrops begin on an unforgiving rampage of the northern Bihar plains. Their unceasing intensity (that lasts till September, and sometimes even October) swiftly erodes cultivable land. Crops ripe for harvest go under. The water level begins to rise from waist-to-shoulder high, forcing vast swathes of land to turn waterlogged for months, some filled to the brim even in winter.

Rivers overflow, cut paths, change course, and deposit huge amounts of silt, clogging and choking the land. The intensity, severity, frequency and duration of rainfall in the districts vary and so does the amounts of silt that rivers deposit. The silt yield of Kosi is 19 cubic metres per hectare per annum, among the highest in the world. (Agarwal, A. & Narain, S. *State of India's Environment, Floods, Floodplains and Environmental Myths – The Third Citizen's Report, Centre for Science and Environment, New Delhi, 1991*)

A look into salient features of a few major rivers shows just how vast their total drainage areas are and the danger potential they hold.

Traditional coping mechanisms versus mainstream embankment policies

Destitution, disintegration, and dislocation accompany the torrential rains and recurring floods. Yet the numbers of dead and the extent of devastation are far worse today with transformed flood management practices.

The way of coping with the hardships and exigencies of the endemic floods was to simply allow the flood waters to disperse over large tracts and drain over time. People's adaptation strategies to this high-risk environment were based on systems that understood the resource-specificities of the region. This was a direct result of the tight integration of village ecosystems and the community's collective stake in its natural resources. (Agarwal, A. & Narain, S. *State of India's Environment, Floods, Floodplains and Environmental Myths – The Third Citizen's Report, Centre for Science and Environment, New Delhi, 1991*)

People marked the arrival of floods as a distinct season called *barh*. They saw it as a regular, inevitable process. They accepted the destruction it brought as much as the enrichment it gave the soil as the silt containing rich nutrients was spread across the floodplains.

Post independence, around the year 1955, this resilient and self regulated way of living with the floods, that respected the limits set by natural systems and took advantages of the opportunities it offered, was altered with government construction of embankments. Meant as a temporary measure, embankments that intervene with river pathways have come to stay in the northern Bihar plains becoming the sole reprieve for the people here. (Mishra, D.K. *Living with the Politics of Floods, The Mystery of Flood Control*, People's Science Institute, 2002)

Earthen walls have been built along the river covering thousands of kilometers to demarcate land into the riverside and countryside; while the former is located within embankments, the countryside is protected by it. The idea is to control floodwaters by impeding its area of spread and increasing its velocity to add to the width and depth of the river, thereby enhancing its discharging capacity.

However, several development analysts and organisations, have, over the years, stridently labeled embankments as 'catastrophic' and 'counterproductive' that mismanage river

with poor rains there are floods. This human made submergence, he says, has resulted in 8.36 lakh hectares of land in North Bihar being permanently waterlogged, which is nearly 16 per cent of the North Bihar's total area. This tragedy affects eight million people. (Mishra, D. K. "Flooded with Wrong Structural Ideas", *The New Nation*, Bangladesh, March 17, 2008; <http://nation.ittefaq.com/issues/2008/03/17/news0379.htm>)

State government statistics place the area water-logged every year at 0.8 million hectares, agricultural land rendered useless at 15 per cent and say the livelihoods of six million people stand affected. Official and non official figures may vary but the reality of the ever-present threat of floods stays.

Himanshu Thakkar of the South Asia Network on Dams, Rivers & People, says, over two million people are permanently trapped between the flood control embankments and an equal number of people are faced with acute water logging in flood protected area, due to embankments. (Thakkar, H. "What, Who, How, When of Experiencing Floods as Disaster", November 2006, Page 8, http://www.sandrp.in/floods/HT_Paper_1106.pdf).

People in the northern Bihar plains live life on the edge, ruled as they are by extremities of weather. Intense cycles of heat, cold and monsoons ravage their lives every year. And, they live with the certainty of uncertainty



systems and result in avoidable fatalities. They say embankments have stopped river water from fulfilling its primary function - discharging excess water, blocked the free flow of its tributaries to cause backflows into protected areas, and thwarted the natural process of building delta and flood plains through large scale silt deposition.

Dinesh K Mishra, an engineer activist on floods since 1984 and Convenor of Barh Mukti Abhiyan (literally Flood Free Campaign), says the stretch of 3,430 kms of embankments cause water to stagnate outside them, too. They, thus, sustain floods instead of controlling them. Now even

In addition, a grave crisis of dislocation results when the land between the embankments becomes uninhabitable. Millions of people who have lived there for generations are displaced for good, causing large scale migration.

However the greatest fallout of this flood management approach is the creation of a vicious cycle of dependency, with the state bureaucracies ensuring its continuation. State funding since 1950s on embankments has been thousands of crores and continues to be an endless expenditure for its maintenance and upkeep. The present flood control strategy has transformed the regional



Salient Features of the River Basins

DETAILS	Burhi Gandak Basin	Bagmati Basin including Adhwara	Kamla Basin	Kosi Basin
Total drainage area (sq km)	12021	14,384	7232	74030
Drainage area in Bihar (sq km)	9601	6500	4488	11410
Water resources (MCM)	4040	2184.4	3249.40	52219
Average annual rainfall (mm)	1283	1255	1260	1456
Total length of main river (km)	320	394	120	260
Cropped area in Bihar (sq km)	7600	5362	2744	8674
Tributaries	Masan, Balor, Pandai, Sikta, Tilawe, Tiur, Dhanauti, Kohra, Danda,	Lalbakeya, Lakhandei, Darbhanga-Bagmati, Old Kamla, Hasanpur Bagmati	Mainawati, Dhaur, Soni, Balan, Trisula	Bagmati, Kamla Balan, Bhuthi Balan, Trijug, Fariani dhar, Dhemama dhar

Source: Flood Management Information System, Water Resources Department, Government of Bihar, <http://fmis.bih.nic.in/Riverbasin.html>

ecology and therefore destroyed people's flood coping mechanisms. Worse still, this has also resulted in the economy being thrown out of gear. As for others colossal projects, alarm bells are also being sounded on the government's longstanding proposal to construct a high dam across the Kosi at Barakhshetra in Nepal. It has been touted as a permanent solution to the problem of floods despite the government not having clear answers about the safety of such a dam in a highly seismic zone. Such projects are clearly deceiving with the sheer size of capital investment and the chimera of majestic infrastructure development.

Oxfam's latest report *Rethinking Disasters: Why Death and Destruction are not Nature's Fault but Human Failure* (2008) highlights a parallel perspective related to floods. According to the report people, especially poor people, pay the price for poor government policies in South Asia. Oxfam's point of view underlines the need for governments to look into vulnerability capacity

assessments, disaster risk reduction measures, disaster preparedness interventions, community participation, attuning indigenous knowledge to local contexts, providing essential services and amending policies. (*Rethinking Disasters: Why Death and Destruction are not Nature's Fault but Human Failure*, Oxfam India Trust, New Delhi, 2008, http://www.oxfam.org.uk/resources/policy/conflict_disasters/downloads/oxfam_india_rethinking_disasters.pdf)

People in the northern Bihar plains live life on the edge, ruled as they are by extremities of the weather. Intense cycles of heat, cold and monsoons ravage their lives every year. They live with the certainty of uncertainty. Monsoons, in particular, play havoc their lives. What has made it worse, as this chapter shows, is government-aided transformation in flood management policies in northern Bihar, which has intensified the crisis and worked to the detriment of the region and its people.

PEOPLE'S PLIGHT during the deluge and its aftermath

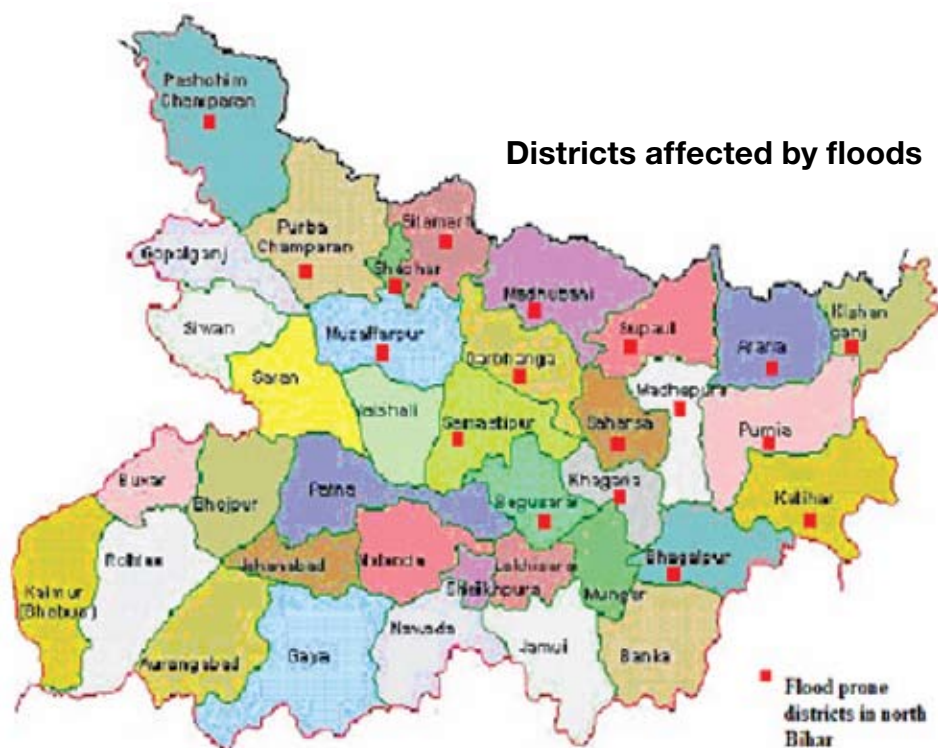
In this area populated by 103.8 million people, which means one of the highest population density in the country – 1,102 persons per square kilometre death, destitution and dislocation accompany floods. So does a continuum of suffering that lasts months.

Floods critically affect eighteen districts of the state. Most villages in these districts are cut off from each other for months as they turn into isolated, crumbling, flood-and-river-mauled islands. Access to them by road or rail is well nigh impossible. If the distress of the days seem unendurable; the nights are worse due to abstinence from sleep because of persistent fear of rising flood waters. Along with rains

and rivers that overflow, there is now the added threat of embankment breaches. All certitudes collapse as embankment opens up unexpectedly, catching people and cattle unawares. They are washed away along with their fertile lands and the mud walls of their fragile homes that are held together with just sticks, bamboo and thatch. In such cases, the existing infrastructure is disrupted. Those who survive are forced to shift to the top of existing embankments, bereft of possessions. The only certainty for them is the futility of planning. Death, disease, hunger, deprivation, dispossession, distress migration, rural indebtedness, and unremitting poverty become all too real. Livestock, too, perish by

Most villages in these districts are cut off from each other for months as they turn into isolated, crumbling, flood-and-river mauled islands





(Source- The Bihar Floods 2007: A Devastating disaster, 2007 Floods in South Asia: From Impact to Knowledge, southasiadisaster.net, October 2007)

thousands; many die of starvation due to the lack of fodder or because they are washed away; others die from severe water-borne diseases that remain unaddressed.

The areas in north Bihar worst affected by the monsoon flooding also happens to be the poorest, with among the largest rural populations in the country, and the least able to cope. About 90 per cent of the people depend on agriculture for their survival in this region and a majority of them live below the poverty line. Estimates are 16.5 per cent of the total flood affected area of the country is in Bihar. Figures of the World Commission on Dams say 56.5 per cent of India's flood affected people are from Bihar of whom 76 per cent live in north Bihar. (http://beta.epw.in/static_media/PDF/archives_pdf/002097_EPW_30_8_1997_Vol_XXXII_No_35/SPECIAL%20ARTICLES_The%20Bihar%20Flood%20Story.pdf)

The scale of the impact in 2008 floods spanned across 993 villages in 412 panchayats located in 35 blocks of Supaul, Madepura, Araria, Saharsa and Purnia districts. A total of

3.3 million population was affected. (Sharma, A and Labh, N. *Summary Report: Owner Driven Reconstruction: Towards a policy framework, Workshop on Owner Driven Reconstruction and Rehabilitation for Kosi Flood Affected Regions, December 18 – 19 2008*). Bihar's flood in 2007 was yet another disaster. It devastated approximately 12,610 villages spread over 264 blocks in 22 districts affecting 24.8 million human lives. Standing crops in over 16.63 lakh hectares were destroyed by flood and affecting 16.13 lakh animals. Over 736,857 houses were destroyed and 960 human lives were lost. (Mishra, D.K. *Bihar Floods of 2007: Some lessons for Everyone, Dams, Rivers and People, November-December 2007*)

With crops destroyed and fields bloated with water and silt, agricultural work and incomes for millions of landless labourers shrinks, leaving them dependent on the erratic support of aid agencies and government relief operations. Floods affect the poor disproportionately, intensifying poverty. The maximum impact is on women who are largely left to fend for the basic needs of the family. Food security stands

seriously threatened as people's saved stocks of rice, wheat, jaggery and puffed rice begin to dwindle. Declining nutritional intake results in incidence of severe malnutrition coupled with anaemia among pregnant women. The extra large globes of *gobar* (dry cow dung) that women so painstakingly pat and preserve in makeshift stores for the rainy day dissipate, leaving a fuel crisis on hand.

Starved of safe water even as rivers run full

The severest irony that strikes in the time of deluge is the fact that though rivers run full and the land is clogged with water, the people are starved of clean water. This is their most urgent need for without safe water and sanitation, it's much harder to escape the downward spiral of poverty and disease. In the absence of any other source of water, people are forced to depend on stagnant flood waters for drinking, defecation, and immersing the dead persons and animals.

The hand pumps sunk by the government to remedy the drinking water crisis are of no use in the floods as they too get submerged,

silted or damaged by the gushing waters. A study by Bihar's Public Health and Engineering Department (PHED) brings disquiet. It says that apart from intensive groundwater exploitation that hand pumps foster, they also bring health concerns as they contain traces of heavy metals and bacteriological contamination. A survey done in 12 districts of Bihar shows the average arsenic content to be 500 parts per billion (ppb). While the World Health Organization says that levels above 10 ppb present health hazards, health authorities in India have fixed the permissible limit at 50 ppb. Further discomfort comes from the fact that government estimates that 77 per cent of people in north Bihar drink water from hand pumps while nine per cent drink from wells. (Planning Commission, Government of India, http://planningcommission.gov.in/reports/sereport/ser/bihinter/st_bihch8.doc)

Given their unsanitary conditions of living where people crowd on embankments in makeshift-shelters (of polythene sheets) along with their livestock, epidemics break out. Diseases like diarrhea, dysentery, stomach-related ailments, respiratory illnesses, malaria,

The hand pumps sunk by the government to remedy the drinking water crisis are of no use in the floods as they too get submerged, silted or damaged by the gushing waters





(Bihar Road Map for Development of Health Sector, A Report of the Special Task Force on Bihar, Government of India, New Delhi, New Delhi, August 2007, http://planningcommission.nic.in/aboutus/taskforce/tsk_bhs.pdf)

filariasis, kala azar (*visceral leishmaniasis*), jaundice and typhoid are rampant. It leads to high morbidity and mortality, especially amongst infants often severely malnourished.

A report (August 2007) by a Special Task Force on Bihar, Government of India, *Bihar: Road Map for Development of Health Sector*, admits to lacunas in the health system. There is a shortage of 1,210 sub centres, 13 public health centres and 389 community health centres. The north Bihar districts have the lowest health status ranking of the 38 districts in the state: Saharsa ranks 23, Madhubani 18, Supaul 12, Khagaria 30 and West Champaran 34. (Bihar Road Map for Development of Health Sector, A Report of the Special Task Force on Bihar, Government of India, New Delhi, New Delhi, August 2007, http://planningcommission.nic.in/aboutus/taskforce/tsk_bhs.pdf)

The intervention of the state, apart from embankment-based flood management approach, is left to relief measures. While its Water Resource Department focuses on building and repairing embankments incessantly, its department of Disaster Management tries to cope with the disaster by providing food,

drinking water packets, halogen tablets, dehydration packets and tarpaulin and polythene sheets.

Apart from the minimal impact during flood itself, relief measures do not help in terms of overcoming flood damages and disruptions, nor do they provide a solution to the problem. Instead they make people dependent on the state aid and reinforce patronage with local institutions. Given the magnitude of suffering, local activists suggest that people need to be at the centre of sustainable water resource and sanitation management and their most immediate and urgent need during floods – that of safe drinking water and hygienic sanitation – should be placed at the heart of the flood debate. Moreover, ecological, economic and social regeneration of the region can only happen with long-term planning of comprehensive and sustainable land and water management. This process needs to take into account water use in terms of drinking, household work, agriculture and other livelihoods, and sanitation. There needs to be inter-connectedness between economic, ecological, health, sanitation, and social sectors and programs.



Megh Pyne Abhiyan: Aims, Approach, Structure and Allies

- The campaign emphasis on placing people at the centre stage, focusing on integrated and long term planning and reviving traditional water systems is brought out



MEGH PYNE ABHIYAN

a crossover in perspective and approach

Megh Pyne Abhiyan (MPA), begun in 2006, focussing on long-term and comprehensive planning of sustainable water management - as its starting point. It came into being as a campaign with the teaming together of a medley of organisations and individuals with shared beliefs and aspirations. It currently works in Supaul, Saharsa, Khagaria, Madhubani and West Champaran districts of north Bihar.

It builds on its belief that villages across the flood-affected plains of north Bihar have the potential to address and find area-specific approaches to the management of natural resources in collaboration with resource groups. And the local communities do stand to benefit by this

MPA, hence, aims to challenge and change current attitudes and practices of natural resource management that encourage dependence on others. Breaking away from the dominant and conformist approach of seeking 'external help' and 'aid', it works to enhance people's capabilities, coping capacities, and self-interest, thereby placing the possibility of solutions at a level so that they can decide for themselves.

The campaign strives to empower people's hidden and untapped capacities and bring to life a sustainable way of managing and regenerating natural resources combining traditional and innovative methods. Its practitioners do not give aid or readymade products to the people. Nor do they see their role as solution providers. Rather they see their contribution as generating stimulus among people to help them secure their water future.

MPA uses sustainable water management, especially during floods, as its initial plank to

foster community cohesion, collective action, self-reliance, and accountability for 'shared good'. Its belief is that once community bonds (cutting across social, economic and gender differences and barriers) are strengthened and the concept of community stake takes root, changes in the management of natural resources is a possibility. It sees social devaluation of people, loosening of community ties, and the negation of community resource management as the reasons for the severity of the impact of the current ecological crisis.

The impetus behind MPA people-powered campaign is a long-term planning of comprehensive water management. It does not just look to tackle the crisis during floods. Instead, it seeks to link a set of mutually-dependent issues into a chain of activities so that people can manage their water resources sustainably and secure access to water through the year. (Prasad, E. & Cortesi, L. *People's Campaign Reawakening Collective Action in Five Flood Prone Districts of North Bihar*, 2008)

Having just completed its third phase now (February 2009 – March 2011), the chain of issues within its activity ambit are: access to clean drinking water during floods through rainwater harvesting; innovative methods for water storage; revival, upkeep and construction of dug-wells; introduction of locally made water filters; profiling hydrogeology of the alluvial plains; testing water quality; discussing health problems resulting from water; reviving forgotten practices of ensuring clean water; encouraging management of water at the community level; contextual and innovative sanitation technology and practices; and the improvisation of a new method of paddy

cultivation - System of Root Intensification - that uses less water and allows the farmer to grow an additional crop in summer to supplement income and overcome food stress during monsoons. (Prasad, E. *Brief - Megh Pyne Abhiyan*: April 2011)

MPA looks into long-established contextual systems of water and sanitation management and explores its potential as they still remain the most sustainable way to manage water and sanitation systems as they are often tailored to local specifications. MPA also aims to revive some effective and contextual resource management practices and measures designed for collective sustenance. It seeks to revive a repertoire of lost knowledge.

Start up of a revolution with an alternative approach of integrated, micro-level water management

In *Maitheli* (one of the local languages of north Bihar), *Megh* means Cloud and *Pyne* water. MPA has used the concept of capturing the rainwater to initiate its campaign. The rationale behind collecting rainwater - a practice that has been

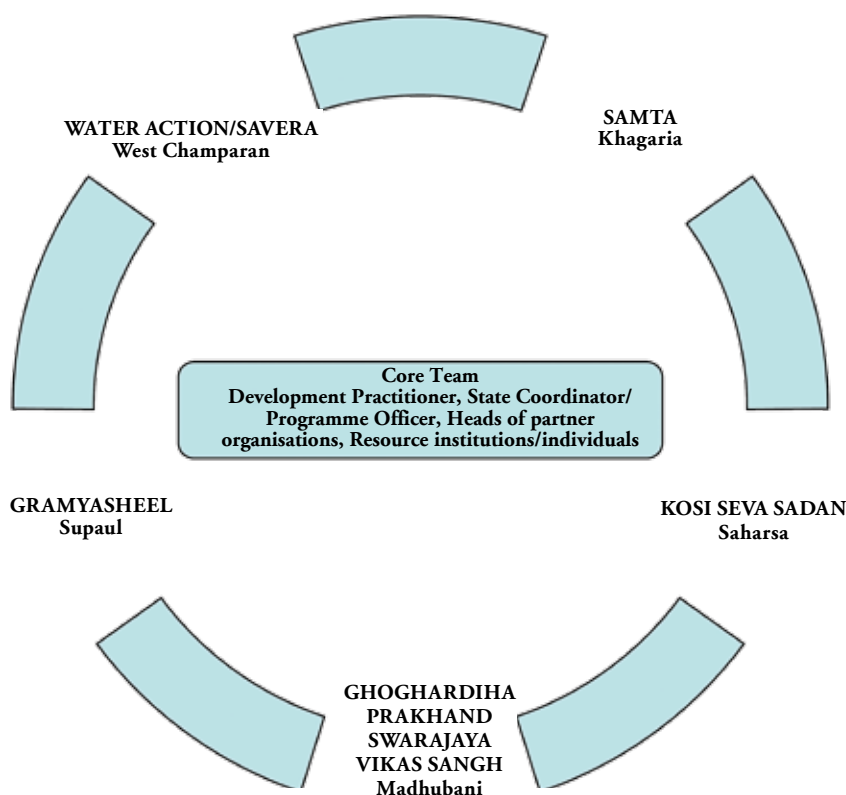
revived in many states of India - is to use this purest form of water that is free and available in excess to address severe shortages of drinking water needs during floods.

The campaign wishes to be a point of reference for an alternative approach to an integrated, micro-level natural resource management in north Bihar. It uses water as a talking point as it rules the lives of people in the region whether through abundance during floods or paucity of safe drinking water. MPA is a way to tell people that water security and its sustainable management is possible; that human-induced natural resource disruption can be reversed, and that the people themselves can make it happen. By linking scientific and traditional knowledge to enable access to safe drinking water and developing income-generating activities and non-farm components into our activities, the campaign sown the idea that many possibilities of redress exist and that people can think of many more.

This is a different kind of initiative and something that people here are not accustomed to. The mindset of expecting 'aid' and 'relief

MPA also aims to revive some effective and contextual resource management practices and measures designed for collective sustenance. It seeks to revive a repertoire of lost knowledge





pace and understanding of the community. It cannot expect the community to take up its pace.

MPAs *modus operandi*

MPA, is a functional, non-hierarchical network comprising a coordination team (with a State Coordinator (presently a program officer), Technical Consultant, Practitioner and heads of five partner organization) that is supported by five grassroots organizations with wide public outreach. While each of the campaign allies has different focus areas, they are all bound by their commitment to the long term process of the campaign to change social

work' is predominant. It is a difficult to counter this yet MPA been successful in eliciting community participation and instill a sense of 'do-it-yourself' as it don't just work from the confines of a set mandate of a project.

MPA also realises that change is neither instant nor easy. There will be opposition and resistance to many of MPAs ideas. Take a simple example. People were initially hostile to capturing and drinking water because of the common belief that it spreads goiter and also because it was not a known practice in the region. Surprisingly MPA efforts in promoting rainwater harvesting in villages were facilitated by the local migrant population who had experienced its efficacy. They contributed by convincing their fellow villagers to adopt it. Now people of 22 *panchayats* in five districts harvest and use it. Also, in the absence of long term developmental commitment and strategies in north Bihar, MPA will have to adopt the

attitudes. The organizations include: *Gramyasheel* in Supaul district, *Kosi Seva Sadan* in Saharsa district, *Samta* in Khagaria district, *Ghoghardiha Prakhanda Swarajaya Vikas Sangh* in Madhubani district, and *Savera* (2007 – 2009) and *Gramyasheel and Water Action* (2009 onwards) in West Champaran district. The organisational design is structured for a transparent, decentralised development wherein organisations follow a planned work schedule yet have the freedom to take forward the process of The coordination team also comprises of resource groups along with resource individuals for enhancing campaign's scope, ability and impact.

In each of these partner organisations, the coordinator at the organisational level is responsible for supervising and guiding a team formed by a development associate, in charge of the reporting, documentation and monitoring work. Under the development associate are field associates, in teams of two, a woman and a man, for each *panchayat*. All field associates are local people

who have a deep knowledge of local issues and know the people in their neighbourhood well. The idea of involving local people is as much for establishing links with the community and fostering change as it is for ensuring continuity of the campaign. MPA involves women as an integral part of its workforce for establishing linkage with local women in order to access their perspective. The campaign does not simply hire women associates. It makes sure they are on equal footing with their male counterparts and provides them with an opportunity to exploit their leadership potential.

MPA field associates begin their work among communities by recording micro-level details on their village and *panchayats*, water sources, water usage patterns, extent of water contamination, water needs of local people, impact of floods, and vulnerability capacity assessments. They also conduct water quality tests for which they are trained as well as to analyse its results. This is essential to garner knowledge about the area of work and to use it later for mobilising people.

MPA initiatives are fully supported by *Arghyam*, a Bangalore-based public charitable

foundation since 2006. *Arghyam* works closely with MPA in terms of highlighting the issue of safe drinking water in north Bihar and extending technical and conceptual support for strengthening the campaign. (See box on *Arghyam*)

Advocacy and communication

MPA uses a gamut of advocacy methods to raise awareness and dialogue with the community at the hamlet and village level on inter linked and mutually dependent water and sanitation issues. *Jal samitis* (water committees) have been formed as a forum for the community to raise their water concerns and raise public consensus on planned interventions. *Jal evam swachhhta gosthis* (water and sanitation meetings) are regularly held at the village, block and district level to create a space for social leaders and opinion shapers to express their viewpoints. The *Jal evam Swachhhta Samvad Yatra* (water and sanitation dialogue journey) is a coordinated and highly visible public water journey that MPA members undertake at regular intervals. They tour all the *panchayats* of their district as

MPA uses a gamut of advocacy methods to raise awareness and dialogue with the community at the hamlet and village level on inter linked and mutually dependent water issues





ARGHYAM: Promoting sustainable efforts in the water sector

Arghyam is a Sanskrit word meaning 'offering'. A Bangalore-based public charitable foundation, it funds strategic and sustainable efforts in the water in many parts of the country. Set up with a personal endowment from Rohini Nilekani, its focus areas are: extending project grants to development organizations, taking up path-breaking research and advocacy, and maintaining the India water portal, an open, inclusive web-based platform for sharing knowledge, information and data on the water sector in India. Recently Arghyam has also begun to concentrate on the Urban Water sector with the intent of developing a practical framework for Integrated Urban Water Management (IUWM). All the foundation's efforts are directed towards enhancing equity and access to water for all and emphasizing all round sustainability whether it is environmental, financial or social. Therefore the foundation's mandate can be summarize in 'Enough water, safe water...always and for all'.

(For details see <http://arghyam.org/> and www.indiawaterportal.org)

another means to dialogue with the people. On an average, it lasts for a period of 15 days and the idea is to raise large scale awareness and mobilisation on water issues through cultural activities, discussions, door to door visits and public events.

Bal mandals (children's group), *Jal mahotsav* (water festival), *mahila samiti* (women's group) gatherings, meetings at public places, schools and local administrative offices, and cultural activities that include puppet shows are used to gather public attention, raise debate, and form pressure groups. A *Bal Jal Samvad Saptha* (water dialogue week with children) is celebrated by few partners to sensitise and gain support from

children. Mass mobilisations such as these help obtain first hand information on water-related problems and also elicit suggestions from people. (Prasad, E. & Cortesi, L., *Megh Pyne Abhiyan Being Implemented in Five Districts of North Bihar: Progress Report, 2007*). Campaign messages are communicated through wall writings, message writing on trees, printing campaign slogans near wells and other public places, campaign songs, and through widely available campaign manuals and pamphlets

To sum it up, MPA interlinked activities and its priorities aim to restore the links between the ecosystem and social system through long term, integrated micro-level water management.

MEGH PYNE ABHIYAN's ALLIES

unique amalgam, unique agenda

MPAs partners are diverse and their area of focus different. Yet they all share a commitment to campaign objectives and contribute to strengthen and broaden MPAs mission. The campaign stands to benefit from their existing outreach programmes, personalised interface they have established with people over the years, and the collective strength that they bring. MPA sees alliance building as critical to sustain the campaign and seeks to widen its network of partners.

The five grassroots organisations constituting MPA have been active in their respective local areas for decades, and they have used their extensive and long established relationship with

people to take forward the MPA mandate of self governance and self-reliance at the micro-level.

The partners, including the social practitioners, work in order to create an atmosphere of confidence for collective action that enable people to develop a perspective and formulate strategies on water and sanitation management; sharpen their skills to negotiate with external agencies; enhance capacities and infuse a sense of ownership within the programme.

They also familiarise their staff on how to conduct preliminary surveys, recognise areas of concern, prioritise redress issues; understand social feasibility of projects, and address

**MPAs partners are diverse and their area of focus different.
Yet they all share a commitment to campaign objectives**





emerging threats in their ecosystems. They help people forge links and work with community leaders, people's representatives, government officials and subject experts.

The working pattern is, thus based on a tested triad — people, partners and programme.

Work plans

MPAs contribution to their each of its partners' development comes through the sense of accountability they infuse within the organisations and its members. Each organisation feels a sense of responsibility to take the MPA message ahead and its members are conscious of their tasks expected of them. Over the years, an invisible thread of commitment has been woven between MPA, its partners and their staff members. MPA also extends a professional resource base to its partners; their expertise is an invaluable asset in terms of understanding of socio-political change mechanisms, guidance for professional growth of the staff and organisational culture, strategy and coordination of the campaign, assessment of the feasibility and the impact of interventions.

MPA staff assiduously maintains daily and monthly reports. Neelam Mukhiya, MPA field associate, says, "I used to be slack in recording my daily activities. It took me months to get into the habit of doing so. Ever since I became regular with it, I have begun to see merit in it. It has been a big learning experience in terms of my working, reflecting on certain happening during the day, comparing and sharing experiences with my colleagues. This led me to grow professionally in understanding the use of individual and collective reports. It may sound simple but the results of it became evident after a few months of effort."

Budgeting systems and audits are also in place, and they are constantly being improved. The coordination team of MPA believes in slow processes. Instead of giving standardized formats and ask the organisations to adopt them, they involve the field members in different exercises and consultations, in order to identify

specific paths for improvements, and slowly converge individual exercises into homogeneous outcomes. This collective effort has taken months and is still an ongoing process, as asserted by MPA members. There is also an established practice of internal evaluation, based on knowledge, effort, approach and outcome of work. It is carried out through personal relationship, instead of formal assessments. This system has the peculiarity of encouraging team members to share their frustrations and setbacks and discuss about them, collectively, or in certain cases, individually.

The coordinators proudly mention that MPA adopts a unique approach in terms of team development, as staff's professional growth and organisation capacity building is one of the most relevant goals of MPA work, and also one of the most energy consuming. The team members are mentored individually to become social leaders, and the teams are followed in terms of organisational culture and accountability. The immediate consequence is that the field associates feel themselves to be members of the campaign much beyond their working duties. As a result, the campaign has been spread in several places outside the working area, due to the enthusiasm of the workers to share about their work with friends and relatives. Moreover, senior staff members are getting recognized and they are consulted by people on different social issues. This is most surprising in the area, where development interventions are not so frequent, and are surrounded by skepticism. These results are the output of continuous efforts made of meetings, consultations, field trainings: the idea being to learn patiently from both good practices and failed interventions.

Partnerships for progress

What have been the reasons and motivations for the five partner organisations joining efforts with MPA? The coordinators of each organisation tell us in their own words.

Rajendra Jha, Kosi Seva Sadan (KSS), Saharsa district

Panchayats: Mahishi Uttari, Mahishi Dakshini, Pastwaar, Mahisaraho and Telhar

“Many of our members have been involved in addressing a variety of social concerns since pre independence. We began addressing flood-related issues in 1981. We also work on issues like health and adult education. Our involvement with MPA came about in 2006. We found their approach to be refreshingly different and we saw the power of its ideas. As followers of Vinoba Bhave, we found resonance in MPAs emphasis on self-reliance. It closely resembles the *swaraj* philosophy.

In this area, so close to the Kosi river, we were experiencing immense problems related to water, especially access to safe drinking water, both during floods and during the rest of the year. For example, most people in our district have blackened teeth as a result of high levels of iron in groundwater. The hand pump installed within our own

several hundreds litres of rainwater.

What is commendable about MPA is that its activities are directed to social cohesion. Our staff and the people we work with come from different classes and castes and we need to work in unison. There are misunderstandings but we sit together as a group both within the team and the community to sort out differences. Frequent and continuous interaction with the *sangathans* (groups) has proved to be the key to overcoming the skepticism regarding the presence of MPA and its intent. What is making the difference, from my point of view, is that MPA insists that solutions should not come from us, instead should come from the people themselves. This has helped build credibility. In Telhar, for instance, people were keen to revive a dug-well but not willing to clear up the debris lying inside. They wanted MPA to hire labourers to do it, and just hand over the cleaned wells to the village. We were unyielding and told them that as it was their well, they should have cleaned it, and their older generation knew how to do it. They finally saw reason and did it, and we help organising the collective event. Now they are

What is making the difference, from my point of view, is that MPA insists that solutions should not come from us, instead should come from the people themselves



ashram here draws water that smells and tastes overpoweringly of iron.

When MPA demonstrated rainwater harvesting techniques using a sheet of sylvauline, and one *matka* (earthen pot) for the storage of water, people were not very excited and did not think it significant. Today the concept and the storage of rain water have come a long way. People are using this technique to capture and use rainwater during and after monsoons. It is important to mention that KSS harvests rainwater on a regular basis and has a system of storage that allows the conservation of

fiercely protective about the well and keep it clean.”

Chandrashekhar, Gramyasheel, Supaul district

Panchayats: Bayriya, Ramdatt patti, Piprakhurd, Ghuran and Balwa

“We have been working on women’s issues for years now and our focus is on gender empowerment, formation of self help groups, child rights, domestic violence and campaigns against witch hunting and foeticide. What drew



us to MPA was its emphasis on conserving local knowledge. This has been an area that we have been immensely interested in.

MPA brought with it a new paradigm of development and we were not sure how people would react to it. We tentatively began with MPA operations in Bayriya in 2006 and disseminated the campaign message to approximately 10,000 people. People took to the campaign initiatives with enthusiasm. This helped us move with sure footedness into more problematic *panchayats*, for instance Balwa. Balwa gains its name from the sand storms that engulf it through the year. The difficulty of living in this panchayat is not only related with lack of law and order, as it is known for. Its villages lie within embankments, and people faces water deficits during summer and floods during monsoon. Continuing to live within embankments, even after being given alternate lands for homes (as they have not compensated for cultivable lands they owned), they have become invisible to planners who see them as defiant rehabilitees.

Our staff work under extremely trying physical conditions as the terrain is sandy, with desert-like scorching sun during the summer, and slushy soil during monsoon. Roads within embankments are non-existent, and villages far off. The field staff walks for a dozen of kilometers everyday, but they have integrated themselves into people's lives, they often spend the night in the villages themselves. An indicator for our own evaluation of how our work is perceived by the people is the fact that we always have requests for volunteering,

particularly by women.

We begin all our community interventions in the five *panchayats* with songs. It helps establish a rapport with the community and create a sense of cohesion even in caste fragmented villages. Apart from the formal interventions, we make little gestures to bring alive the campaign. We encourage people to serve tea made with water collected from rainfall."

Prem Kumar Verma, Samta, Khagaria

Panchayats: Dhamma Khairi Khutaha, Uttar Marar, Chatar, Sarsava and Madarpur.

"We joined efforts pre MPA formation in 2005 and began work in one *panchayat* first in 2006 and then expanded it to four more. Apart from Madarpur, located in a region with high levels of arsenic in groundwater, the remaining *panchayats* are located in the most flood affected areas of the district. As they are at the tail end of the drainage area of several rivers, most of the villages in our region get flooded beyond redemption. Migration levels are as high as 60 per cent of the male working force, as most of the people rely on agriculture for their living. We were attracted to MPAs comprehensive look at land and water issues and its aim to address all of them together.

Rainwater harvesting, the first activity promoted by the campaign, is now recognised as a life-saving habit, and it helped the campaign to establish its legitimacy. MPA activities are now an integral part of community life and people

recognise the campaign and the people who work for it. In Dighni village, Chatar *panchayat*, people built a bamboo bridge to get to the village after one of the MPA woman staff, Wahela Khatun, almost drowned while wading through water to reach the village. This is a spiral, from recognising the commitment of the staff, to realising the people own potential of solving problems together. Most people in our *panchayats* are now coming around to this special brand of MPA. This is because government sponsored schemes like *swajal dhara* are not active and the officials appointed by the government for each district to monitor water quality rarely visit.

However, there is resistance in many pockets due to caste and other existing tensions. In Belour village, in Sarsava *panchayat*, there are still simmering tensions where warring groups won't allow well revival. The case was the same in Khara tola in Chatar *panchayat*. But over time we have resolved issues here. We have got people to understand that cleaning of wells it is meant for everybody's benefit, and if the water is dirty, it is such for everybody."

community self-reliance, freedom from control of landlords, adult and non-formal education, flood intervention, and community health.

My father Tapeswar Singh, who is the founder of this organisation, and the president of the Bihar Sarvodaya Mandal, makes a valid point when he says that MPA is a practice and a symbol of self-reliance among communities in a way that Gandhiji's *charkha* (spinning wheel) was. As a simple cloth weaving mechanism became the symbol of autarchy, similarly rainwater harvesting in north Bihar means that everybody has access to pure water, without caste restrictions nor the interference of external forces. This phenomenon has relevance in north Bihar because water is a political tool, and being independent in accessing water is revolutionary.

While propagating community involvement as the 'mantra' to overcome problems locally, the development workers need to realize and acknowledge that individual aspirations and hidden agendas often derails such participatory processes. The dug-well revival initiative in the Nirmala village of the Balia *panchayat* is an example. The efforts of people to revive wells

While propagating community involvement as the 'mantra' to overcome problems locally, the development workers need to realize and acknowledge that individual aspirations and hidden agendas often derails such participatory processes



**Ramesh Kumar, Ghoghardiha
Prakhand Swarajya Vikas Sangh
(GPSVS), Madhubani.**

***Panchayats: Lucknaur Paschimi,
Gangapur, Balia, Harna and Harri***

"This organisation was set up in 1977 at the time when the flavour of the *Bhoodan movement* was rich and Jayaprakash Narayan's *Sampurna Kranti* (Total Revolution) campaign was at its peak. Our focus has always been on community self-reliance and MPA has strengthened our resolve. Over the years, we have focused on

on their own were overshadowed and literally administered by the erstwhile *mukhiya* of the village. The leader wanted to control the revival of dug-well himself, fearing emergence of counter forces in the village. Participation does not mean equal participation, nor peaceful participation. The revival of a dug-well can be used by different parties and can result in a chaotic power conflict. When is not possible to prevent it, the field workers, with the guidance of the organisation, needs to be able to compose different interests, while keeping in mind the equality principle of socio-development. Because of what happened



in Nirmala, the organisation became cautious and preventive about the intent of certain groups who were exploiting the participatory process, and oriented their staff accordingly.

GPSVS's concern with MPA is to mainstream water issues with other development works like health, education, disaster response, microcredit. In fact, water management should not be just about water instead it should incorporate issues like agriculture, livelihood, health, rights and equality.

Vinay Kumar, Water Action/Savera, West Champaran

Panchayats: Dakshin Teluha and Shayampur Kotraha

“ I have been working with issues of *panchayat* *raj*, health, women' empowerment, rural and urban governance for years now. MPAs confidence in people's leadership and their efforts to help women find a voice and identity was attractive. The region has also been facing enormous water stress and MPA focus on addressing issues of groundwater contamination, drinking water needs and productivity of land seemed extremely contextual.

What has made people open to MPA is the failure of *panchayat* functionaries and government programmes. The Ministry of Rural Development had launched the National Rural Drinking Water Quality Monitoring and Surveillance Program, a centrally sponsored scheme, with the idea of monitoring and surveillance of all public drinking water sources in the country through decentralised processes. But this scheme till now has benefitted no one.

However, MPA has no agenda in criticizing the government per se. Instead, we have been forthcoming in establishing collaboration with government at different administrative levels. The simplicity of the campaign normally does not illicit immediate positive response from the government officials. But after some intense interaction the local administration sees the potential of working along with us, and we

are able to converge on certain activities. The collaboration is not smooth sailing, but surely experiential.

At the same time, MPA has played a significant role in the formation of *sangathans* – literally meaning a “collective force” – that have evolved into an unstructured yet powerful forum. A total of 45 *sangathans* have been constituted in all the *tolas* of the *panchayat* in the first year. Because of the campaign's learnings, it was made very clear that the *sangathan* is not a platform to gain any benefit, or to be utilized for power games. On the other hand, what has been unique about these *sangathans* is that women participate actively. As they often hold political position only nominally, they are keen in participating in practical initiatives. And they do not want to limit themselves to discuss water issues but they address a variety of topics.”

In 2009, due to certain unavoidable situations MPA had to redefine its partnership status in West Champaran. It partnered with Water Action, an organisation formed along the mandate and vision of MPA in order to execute MPA's belief and commitment at the grassroots. The organisation not only helped the campaign to continue its work in the previously identified *panchayats* but also created opportunities in exploring, understanding and identifying problems and solutions for an area within the district, with a different hydrogeological setting where water and sanitation related problems remain largely unattended.

MPA sees alliance building as significant in campaign development and in sustaining it. They are keen to expand the core alliance and include many more like-minded voluntary organisations so that they can benefit from their outreach and experiences. What allies need to be guided by is a commitment to the campaign objectives. They need to be clear about what it can contribute to the campaign, what values and resources it might bring to the table and what they stand to gain from the campaign as this is about progress through partnerships. MPA is also keen to synerise its efforts with the state government, local administration, elected representatives, resource groups, professional bodies and committed individuals.

section

3

Megh Pyne Abhiyan: Activity Spiral

- THE ENTIRE GAMUT OF MUTUALLY DEPENDENT AND INTERSECTING WATER ISSUES OF MPAs ACTIVITY AMBIT IS DESCRIBED



RAINWATER HARVESTING

the start of Megh Pyne Abhiyan's water journey

Capturing the raindrop from clouds to address drinking water needs that turn critical during floods, is what MPA intervened with. The concept was unknown and unorthodox; most people in this region were unfamiliar with the practice; others resisted its use as the belief that drinking rainwater caused goiter was deeply entrenched. This meant that the campaign had to begin by changing people's perceptions to overcome resistance.

But MPA proponents were unfazed by the unusual start to their campaign as their plans were to reverse normal practices of water management – the dependence on government relief and aid to get supply of drinking water, on hand pumps as the only source of water, and external aid to improve the existing water infrastructure.

The MPA activity spiral in its first phase from May to November 2006 began by showing people water security in an unsought source: threatening clouds, that treacherously disintegrate everything in sight. It sought to build capacity of the people, help them capitalise on their indigenous knowledge base, and the positive aspects of their environment to reduce vulnerability. And, more significantly, it began placing on the onus of ensuring safe drinking water supplies on the people themselves. With this, a new framework for sustainable water management came into being where a conscious effort was attempted to reconnect mutually-dependent water issues, place the needs of the people at its fore, and bring them together as a collective force.

Addressing drinking water needs at the time of floods by setting up rainwater harvesting systems was just the first step in a long line of linked activities. MPA began to also demonstrate the significance of reviving dug-wells to address water requirements during the rest of the year when there is no recourse to rainwater. It advocated the merits of indigenously-produced water filters, that replicate the filtering process of a well, and rids water of iron, bacteria and arsenic. These efforts gain relevance in light of the fact that a majority of the hand pumps in the campaign districts are contaminated with high levels of iron and arsenic among other heavy metals and biological contamination.

MPA has also made the communities aware about water quality by underscoring the relevance of water testing as a method to determine the quality of water they are consuming and the extent of groundwater contamination. Aware of the intrinsic part water plays in the fabric of people's lives, the campaign has also tried to forge a link to livelihoods by boosting opportunities of farmers to grow one additional crop in summer through the innovate technology of System of Root Intensification. This method of rice cultivation uses water sparingly yet yields bountiful produce as compared to traditional methods. Eco-sanitation that promotes the idea of a sanitized, environment-friendly disposal of human wastes with minimal use of water but a high quotient of hygiene is yet another idea that is being explored. Most importantly, MPA has succeeded in making people see the inter-connectedness of this entire process. In this, MPA sees potential for snowball action in community-based solutions.

Rainwater harvesting: An assurance of all-year water availability

Capturing the raindrop to assuage drinking water needs and household uses has gained in popularity and acceptance in other Indian states. To familiarise people here about the processes involved and sensitise them to its long term impact and benefits, MPA set in motion a process to talk to people in the four campaign areas during the time of the monsoons in 2006 after making detailed assessments about the impact of floods in each district for one and a half years.

Rainwater harvesting as a concept involves collecting rainwater directly or recharging it into the ground to improve ground water storage. Direct rainwater collection in an area like this can be done using the most basic form of this technology: capturing rainwater that falls on the roofs of shelters in vessels, earthen pots or plastic containers. As shelters during the floods are mostly polythene sheets supported on bamboo poles, this is what the campaign used as its initial plank.

It began by familiarising people with the low cost and easy method of rooftop rainwater

districts who confirmed the advantages and feasibility of rainwater harvesting in the areas that they lived in for work.

Once the resistance to rainwater harvesting was partially overcome, the process of setting up of water committees began. The idea was to identify places for rainwater harvesting installations and at the same time establish a system for community cohesion and contribution. The fact that this was to be a people's initiative – to be stage managed entirely by them – was repeatedly emphasised. People were involved both in the sourcing of bamboos and ropes and in the setting up of demonstration units.

MPA merely provided sylvauline sheets and earthen pots in some cases, and visited the villages regularly to ensure constant monitoring of the installation. During floods, the partners directed the water committees to propagate individual installations at the panchayat level. Encouraged by MPA, people during 2007 floods, began to look beyond the fact that provision of water was a state responsibility. They began to gain confidence that they could ensure their own

MPA staff also sought to understand people's reservations about consuming rainwater, allay their fears, and reassure them about its safety



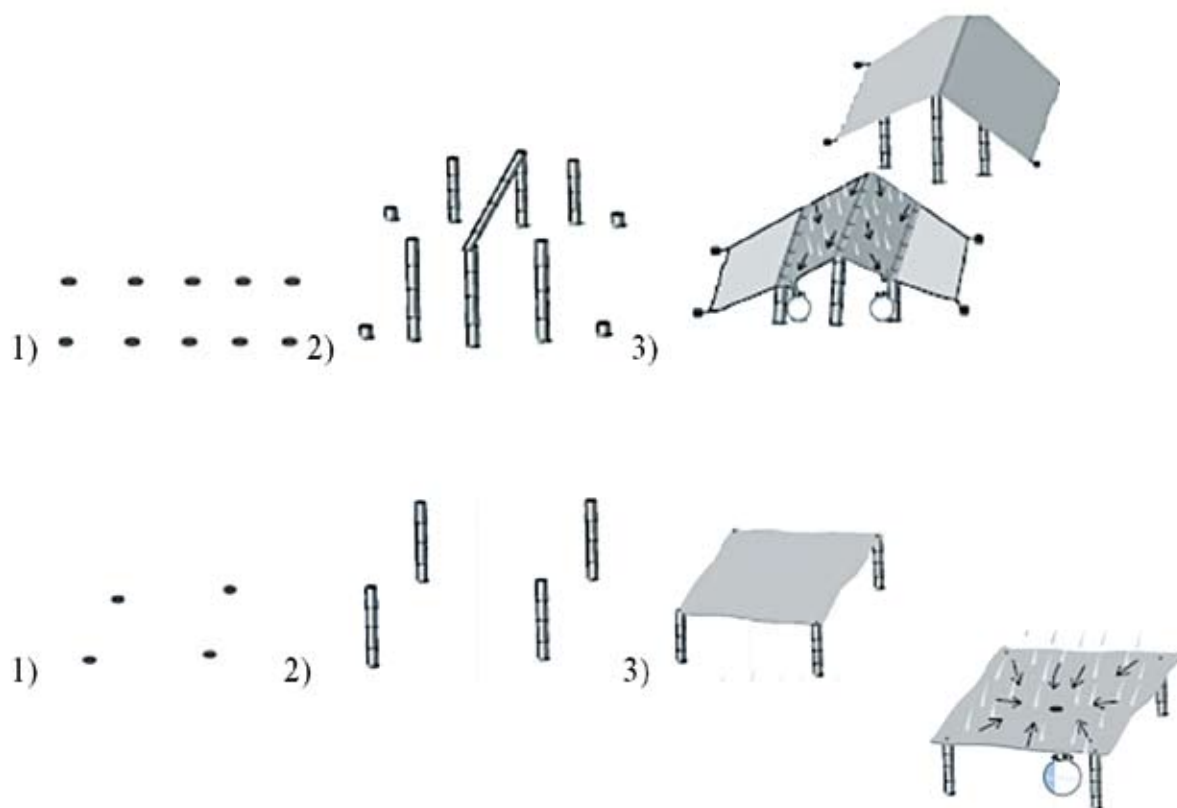
harvesting that could be implemented by any individual just using polythene sheets, even the modest 2 x 2 feet piece of plastic, locally available bamboos, and pots. Pamphlets, visual in nature and a step by step guide to rooftop rainwater harvesting, were distributed to inform people about the correct procedure of rainwater harvesting.

MPA staff also sought to understand people's reservations about consuming rainwater, allay their fears, and reassure them about its safety. Unexpected support for rainwater initiatives came from the migrant populations in the

supply both at the community and even at an individual level: a remarkable breakthrough

Saharsa

In the district of Saharsa, Pawan Kumar Bhand, an MPA field associate in Mahishi Uttari *panchayat*, says that when these initiatives were undertaken, MPA staff made a special effort to record the opinions of people. This was an attempt to understand how people were benefitting from these initiatives and what improvements are needed. In the five *panchayats*, only two per cent people have access to safe



water; most of people have blackened teeth as a result of the iron content in their water. Pradeep Kumar, MPA field associate and later the programme officer of the campaign in Pastwaar *panchayat*, admits to the fact that he faced resistance among many of the 120 households in Nagarpatti *tola* as they would not drink the captured cloud water. "It was only when we field workers drank it in front of them that they agreed to try it themselves." Aditya Jha, former development associate, MPA and now *panchayat samiti sadasya* (member), Saharsa district, says real acceptance came with improvement in people's health, when the consumption of rainwater brought down stomach problems. Kumkum Devi, another MPA field associate in Saharsa, says, "In Telhar *panchayat*, the acceptance of people came with the fact that rainwater came to be associated with hygiene and the fact that it contained no impurities that were found in hand pumps."

According to MPA staff records in Saharsa in 2007, the name of 17,600 people was registered to have used rainwater to address their drinking water needs.



Supaul

In Supaul, the MPA team has composed songs in praise of rainwater. They sing them at all community gatherings, especially meetings organised to discuss water issues. Beena, field associate, MPA, says, people in Piprakhurd *panchayat* were not convinced about the feasibility or the uses of rainwater harvesting when first approached. They began making efforts only when we demonstrated how easy it was capture rain and use it to advantage. Now access to safe water has become a reality, she says.

In Balwa *panchayat*, Devendra Mishra, field associate, MPA, says, "It was difficult to enlist the help of the political representatives, but on the other hand it was heartwarming to see the response of the people who pitched in to capture rainwater for the entire community. Women, who see it as a punishment to be wedded in this *panchayat*, due to the long distances they have to travel to fetch water and because of the violence perpetuated against them, had smiles on their faces after a very long time as they could access water within their homes."

In Ghuran *panchayat*, that is wedged within embankments and suffers almost complete submergence, people found refuge in two things this monsoon: the top of embankments and in rooftop rainwater harvesting, say Shambhu and Poonam, MPA field associates. Messages on trees and wall writings on the merits of capturing the raindrop have helped in its widespread acceptance. Children have contributed to spreading the word through their *bal mandalis*. Both the field associates say they have also convinced the religious head in the village to talk on this unique formula and have taken up stalls in *melas* to tell people about it. Puppet shows that talk of rainwater harvesting have been a great draw. And, most heartening is the fact that doctors in the area use rainwater for treatment and recommend its use to their patients.

In Ramdutt *panchayat*, people were concerned about water access and security after the monsoons, says Ram Narayan, field associate, MPA. "We talked of storage facilities to them and demonstrated how people could store water in *matkas* (earthen pots), plastic cans, within

MPA team has composed songs in praise of rainwater. They sing them at all community gatherings, especially meetings organised to discuss water issues





dhaks (large containers used to store grain), and in specially constructed underground tanks,” he says. In the Gramyasheel office, the staff has help create a container for storage made of bamboo and secured with cement. This serves as a demonstration model that can be replicated”

MPA figures in 2007 on rainwater usage in Supaul reads: Bariya: 2,276; Ghuran: 2,143; Balwa: 2,393; Piprakhurd: 2,272 and Ramdutt patti 1,509; taking the total number of users to 10,593.

Khagaria

In Khagaria, MPA used the created public water forums like *jal goshtis* and *jal samvad yatras* to generate dialogue and debate around the water needs of the community and promote rainwater harvesting. People take to change slowly in this area as there are very

few development interventions. The concept of rainwater harvesting, hence, took time to gain root.

In Sarsava *panchayat*, Chautham block, around 1,200 people drank rainwater which was an encouraging start. According to Wahela Khatun, in the Chatar *panchayat*, after initial resistance, many people have taken to using rainwater, especially with the drop in cholera cases. “People are now so impressed by our initiatives that they call me *Varsha Rani* (Queen of rains). Rainwater was used to cook *khichidi* (a rice-lentil porridge) by flood victims during distress situations,” she says.

In Dighni village, in Chatar *panchayat*, where the Bagmati swells and creates chaos, women bear the brunt of ensuring water availability for their families. Rainwater collection has helped them the most and made their lives easier, say

HARISHANKINI

Best of times, worst of times

Harishankini village, in the Mahishi Uttari *panchayat* in Saharsa district, tells a story about the best of times and the worst of times with regard to rainwater harvesting. Ten families of bamboo weavers reside here on the banks of the *chaur* (water-logged area) called Ashubadha *chaur*.

Belonging to the unprivileged caste, the people of this village suffer from extreme inattention and indignities. Their colony is illegitimate and the residents live in constant fear of eviction. The houses are in close quarters to each other; pathways are crisscrossed with narrow overflowing sewer lanes, and people live in intimate proximity to the livestock and pigs they raise.

The single hand pump installed by the government has been uprooted as it stopped functioning. Their only source of water now is the local, stagnant *chaur* that bears relics of an abandoned minor irrigation. It runs full only in the monsoons. Though it looks serene and reflects the verdant green of the water hyacinths, it is highly polluted as the community uses it for washing and defecating as well.

Illnesses’ are an inevitable and everyday fact of life. Sunita Devi, a resident of the hamlet, sits with a basket full of medicines for her 20-day old infant. “The only time we don’t suffer from illness is when we drink rainwater. Our children lead healthier lives. We know now that there is a reachable and free solution to the problem of safe drinking water. When we got to know about it, we were not letting drops go wasted. All the ten families were catching as much water as they could. Unfortunately, we don’t have too many pots or vessels to store water. So you can now see how the children and adults are once again down with severe stomach problems, skin infections, diarrhea, fever and eye infections. And there is no health service for us. We go to a medical shop and give all the money we could collect, praying for a cure.”

local residents Gita Devi and Manki Devi. “We are now convinced that it does not cause goiter. It has brought respite to us and we are grateful,” they add.

At a one day water meeting addressed by people’s representatives and water experts at Chautam block in April 2008, local people gathered to discuss their water needs and issues of concern. It was clear that they were able to co-relate issues of hygiene and health to water. Physical, chemical and bacteriological contamination of water was discussed and people reiterated their belief in the purity of rain water. “Nobody had an idea of water quality two years back or about drinking rainwater. That this fact has been accepted by the people and that they admit to it in public forums is a measure of MPA success,” says Narendra Kumar Singh, field associate, MPA.

Figures gathered on rainwater harvesting in public meetings and household usage in the five *panchayats* in Khagaria read: Chatar: 1,235; Dhamma Khairi Khutaha: 2,050; Uttar

Marar: 1,075; Sarsava: 1,175 and Madarpur: 85. Rainwater usage in temporary shelters during floods read: Madarpur Dhala: 200; Sansarpur block: 150, National Highway no 31: 125; Railway Station Khagaria: 100 and Awas Board Colony: 60. The total rainwater usage is placed at 6,255 persons. The names of these people have been recorded publicly as rainwater users, but these figures do not pretend to be complete.

Madhubani

In Madhubani’s Nirmala village in Balia *panchayat*, 200 households have benefitted from rainwater harvesting, says Krishna Kumari of MPA. The campaign’s rainwater initiative began from here and it has been an enduring enterprise in the village, she adds. Renu Devi from Lucknaur Paschimi, says, 650 people have benefitted from rainwater. The figures of the number of people who benefitted from rainwater in Gangapur and Balia are 900 and 850 respectively. Innovative efforts have been made to popularize rainwater usage: water tanks

Nobody had an idea of water quality two years back or about drinking rainwater. This fact has been accepted by the people and that they admit to it in public forums is a measure of MPA success





that are distributed to people to store water for emergency situations have now been modified into water storage tanks for rainwater

Narrating his experiences, Gundev Yadav, MPA field associate, who works in Gangapur, says he stays near the river Kamala Basin and has faced the wrath of the river. "I began experimenting with rainwater and found it immensely beneficial. This is the reason why I have been able to talk to others and convince them of its benefits."

Premta Jha, MPA field associate, relates the deep sense of inadequacy that had gripped the displaced people of Bhitara tola, Bhaduaar village in Harna panchayat during the floods in 2007 due to their inability of even accessing potable water. Rainwater harvesting technique changed their level of confidence as they were able to partially secure their health and water needs

The team at Harri panchayat of Owaish Alam and Shubita Jha, claimed to have learned from the enthusiasm shown by Rajo Devi, Garh Tola, who, seeing the common installation, decided to harvest water in her house using a small polythene sheet. She also shared the harvested water with her neighbours. "These experiences not only indicate the usefulness of adopting rainwater harvesting, but also project its impact on social relationship" comments Basudeo Mandal, MPA development associate.

West Champaran

In West Champaran's Dakshin Teluah panchayat, the idea of rainwater harvesting was reached out to 45 tolas through *jal samitis*. Jai Prakash of SAVERA says rainwater harvesting has been possible in the 28 villages severely affected by the floods of 2007. Around 14,000 people have been recorded to have benefited from this intervention. Villages like Naurahi, Teluah, Bintoli and Badai have experimented with this low-cost experiment. Badai tola is an exception in the sense that the entire village

adopted rainwater harvesting systems during monsoons to overcome the acute distress they were undergoing.

A telling comment comes from Jagannath Yadav, 70, an elder living in Naurahi panchayat. "Who can deny the magic of monsoons? Our folk tales talk of the purest form of water being from the heavens. People have forgotten these tales and their messages. I am too old to tell people and convince them but I am delighted that MPA has taken up this challenge."

The temporary rainwater harvesting despite its potential was yet not being exploited to its fullest possible potential due to lack of adequate storage facility available in the villages. The existing facilities were either inadequate to store rainwater for long duration or they were susceptible to secondary contamination. It took almost three years (2007 - 2010) for MPA to evolve a local rainwater storage facilities. The earthen pots were developed as temporary storages facility and the age old grain storage structure, popularly known as '*kothi*' was further innovated and developed as a rainwater storage facility, which is now known as '*Jal Kothi*'. Keeping in view the socio-economic variations in rural Bihar, temporary storage facility and *jal kothis* of various designs with varying storage capacity and raw materials have been developed locally with the help of skilled craft persons and masons. Each of the five districts has developed local variations of *jal kothis* that are contextual to the requirements of the people.

For MPA the start of the journey was not easy. Convincing people to use rainwater and simultaneously set in motion was difficult. Success came slowly, yet surely. Success came in the form of people seeing their initiatives yielding results and in their recognition and pride that they could take charge of their problems and their lives – a possibility that never existed in their realm before.

DUG-WELLS

water testing and indigenous water filters for clean and adequate drinking water

For MPA, the process of enabling the revival of dug-wells was a natural progression from rainwater harvesting. When people have no recourse to rainwater after the monsoons, the quest for safe drinking water begins afresh. In the present scenario, storing of rainwater is possible only in limited quantities until such time as large storage facilities are created.

Dug-wells, usually a common property resource in most villages, are an excellent and clean source of drinking water as it is equipped with natural filters to remove impurities. They were an intrinsic part of northern Bihar village life. Indigenous practices of well upkeep were

interwoven with tradition to maintain the longevity of wells. They were a central force in weddings and other significant social events, where people were expected to seek its blessings, and also a meeting point for the village communities (especially for women) wherein social ties were strengthened.

All this started to change when the state government began touting hand pumps as the panacea for all water problems and the magic bullet to address the water crisis during floods. It became the visible symbol of government largesse in flood relief programmes. The trend continues till date despite mounting proof of the presence of dangerous levels of heavy metals and biological

Dug-wells, usually a common property resource in most villages, are an excellent and clean source of drinking water as it is equipped with natural filters to remove impurities





contamination in water drawn by hand pumps.

Chapakaals (hand pumps) have burgeoned in thousands across the region and have become the preferred source of water; while rich homes finance their own installations and flaunt them in their courtyards as a status and wealth symbol, the less advantaged houses share the ones installed by the government at various locations in the village. Rich or poor, all homes now depend on them; the overriding belief is that the deeper the drilling for the hand pump, the greater will be the purity and amount of water derived. Hand pumps have also over the years been used as a political tool to please respective constituencies. The downturn to this trend is the political disapproval of community efforts to revive of dug-wells that allows easy access to water and minimises dependence on the political sops.

Dug-wells: In need of a new lease of life

Dug wells have, thus, fallen into disrepair; a majority of them are used as the garbage dump of the village. MPAs interaction with village communities during the first phase of its operation, where the focus was on rainwater harvesting, made them realise the need for abiding and alternative sources of water post monsoons. The exercise of water testing demonstrate that wells were affected by bacteriological contamination, but not by chemical one, and that cleaned well where suitable for drinking. Though there were no allotted funds within the campaign's budget for the revival of wells, the members were impelled to take on the challenge. As in the rainwater harvesting initiative, they saw their role as simply providing the stimulus for change. People were meant to take forward the revival process by contributing money and labour so that the collective realisation towards the relevance of the asset could be restored. And secondly, the control over its usage and ownership could remain with them.

But when this subject was broached with the people, MPA had to contend with tremendous

resistance. The lure of the hand pump was not easy to rid. People were unwilling to make well revival a community enterprise like they did with rainwater harvesting. Communities as a whole had got used to a readymade product delivered to them. They were naturally not very open to contributing their services to cleaning the well and in many cases even deliberately under reported the number of wells in their village.

MPA team members persisted. They used the same logic as before, explaining why community solidarity to rejuvenate wells is essential and how such a process could facilitate easy access of safe drinking water through the year, and minimise the risk of diseases. They underscored how wells could be turned into a community resource over which community rights and ownership could be re-established. In order to strengthen their argument, they began testing water in all the working areas; this after training their staff members extensively and equipping them with water testing kits.

It was this that caused the turnaround. Sharing with the people the result of water testing of both wells and hand pumps for the presence of physical, chemical and biological impurities in all the districts made the people understand the difference of contamination. It became clear that dug-well contamination was due to the lack of collective action.

Water testing

MPA held training workshops for its staff on water testing in partnership with Delhi-based Development Alternatives. After that MPA staff set out to test water quality of 50 sources (hand pumps, dug-wells, ponds and *chaurs*) in each *panchayat*, checking for physical, chemical and biological contamination.

As a strategy, the campaign first decided to take up water testing in order to develop an understanding about the quality of groundwater and other water sources in all the five districts. Keeping in mind the feasibility of the testing and the representativeness of the selection, it was decided that in total 50 water samples (from handpumps, dug-wells, ponds, and *chaurs*) per *panchayat* would be tested. Out of these 50 sources,

in 25 extremely important sources (either public or private sources where large number of people consume water and are located in central places like schools, religious places, community centres) physical and chemical tests were undertaken, and in all the 50 sources (including the 25 selected where the number of users are comparatively less) E Coli and arsenic tests were to be conducted.

The package of practice for the water testing initiative included

- Preparing a comprehensive map of each panchayat, highlighting main geographical reference as river, embankments, main roads, bridges, perennial waterlogged areas, together with public spaces, (i.e. schools, panchayat offices, temples, mosques, health centres, post offices) and collective water sources (wells, ponds).
- Identifying 50 water sources in the panchayat and plotting it on the panchayat map to ensure entire coverage of the panchayat through uniform distribution of the selected water sources for water testing
- Identifying a central and safe place for

equip the field and development associated with

- Detailed understanding of the activity and the logic behind adopting this strategy
- Comprehensive knowledge about water contamination and its impact on human body
- An experience of research procedures that are designed to ensure the credibility of a field based research
- Building capacities of MPA members to carry forward the argument of safe and secure drinking water resources on different forums
- Strengthening the comprehension of MPA members concerning the short and long term campaign strategies with regard to water contamination

The package of practice steered the water testing exercise in all the districts. Tests were carried out in two phases (2007, 2008, 2010) in Supaul, Saharsa, Khagaria and West Champaran districts. An additional phase (2008) of water testing was executed in Madhubani and (2009) in Supaul districts. The main purpose for performing the water tests in different phases was to comprehend the groundwater dynamics post and pre floods. The test results indicate

The main purpose for performing the water tests in different phases was to comprehend the groundwater dynamics post and pre floods



conducting water testing, generally the organization headquarters.

- Developing a safe, secure and standard procedure for water testing
- Developing the following formats to record and document the water testing results at the panchayat
- Compilation and assessment of the water testing result at the organization level
- Impromptu cross checking of water testing results

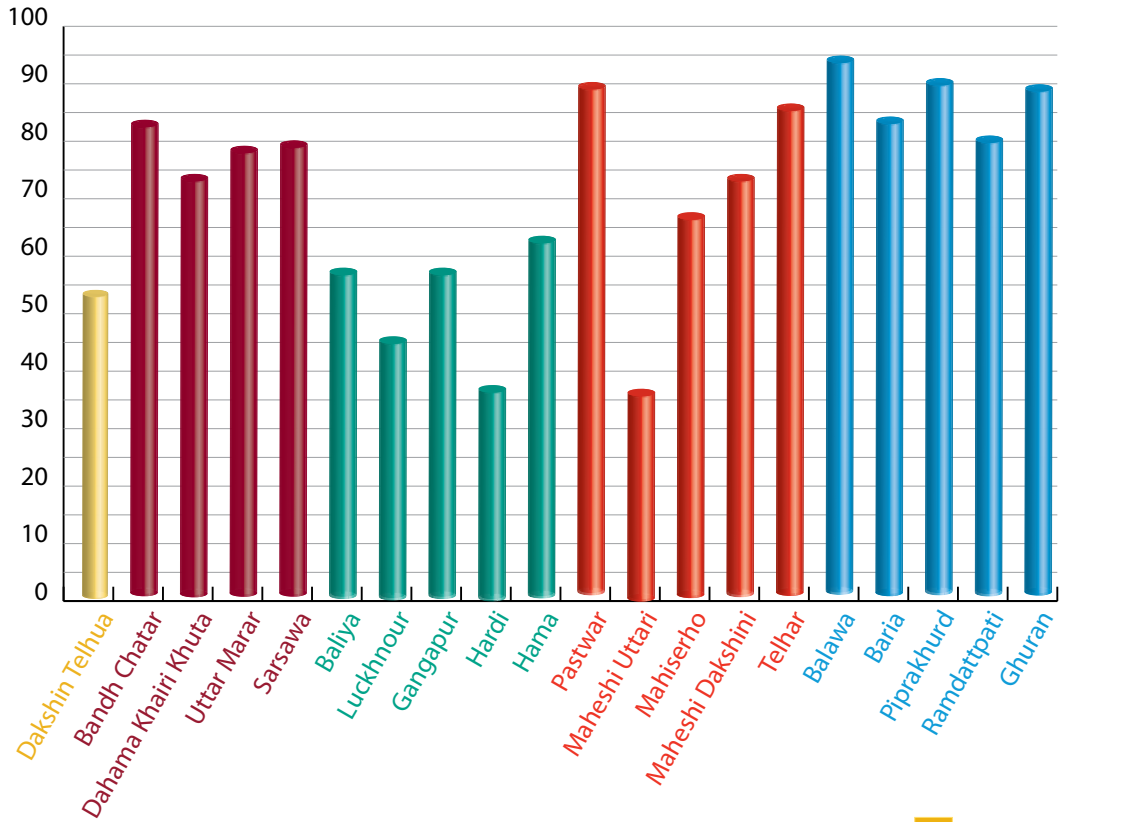
Reasons for adopting such a prescribed and precise course of action for water testing was to

slight variation in the groundwater quality (in the five prone districts) pre and post floods. In most cases, the groundwater quality remains relatively consistent, which certainly implies that the quality problem (as mentioned in Table 2), remains uniform throughout the year, besides the additional problem that surfaces during the floods. In this given context, is it misplaced to claim that local habitants of the 21 panchayats are being exposed to groundwater contamination throughout the year? And that too without an iota of knowledge about their drinking water quality.

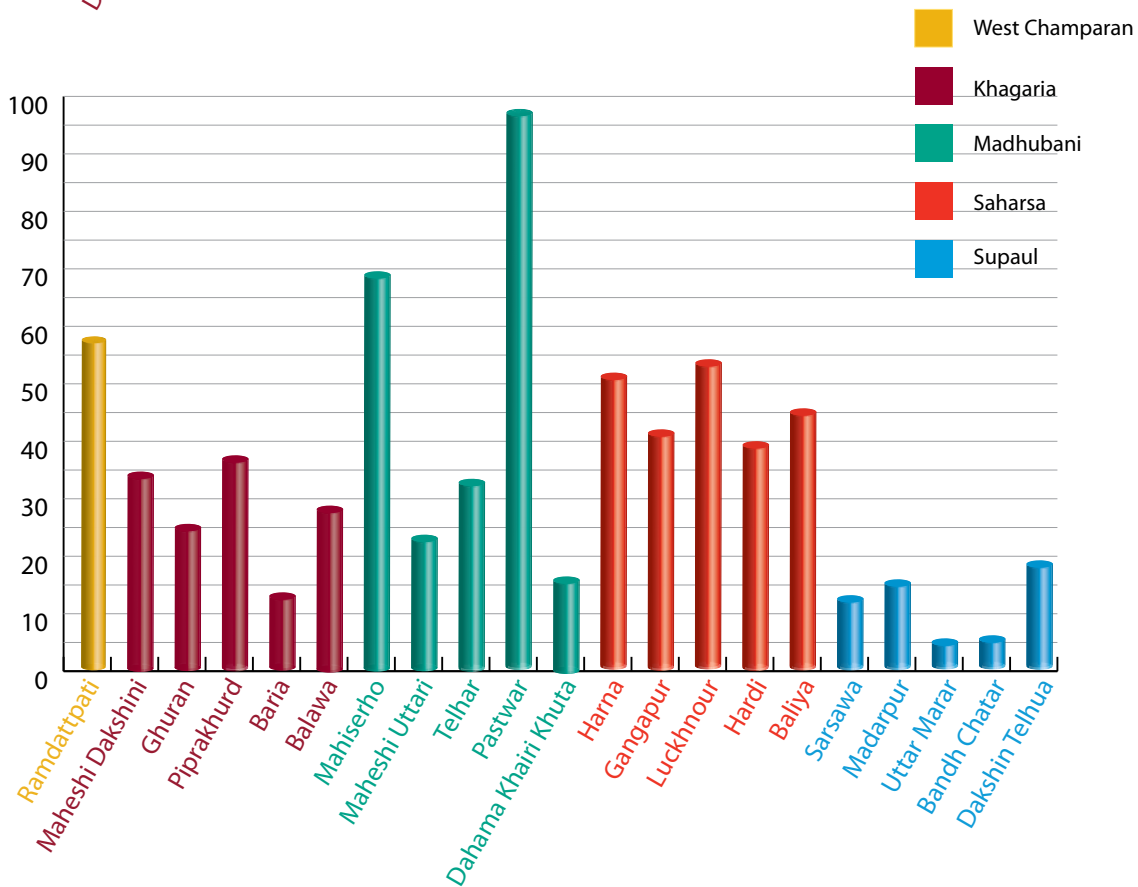


2007

Handpumps - Percentage of samples beyond desirable limits



IRON

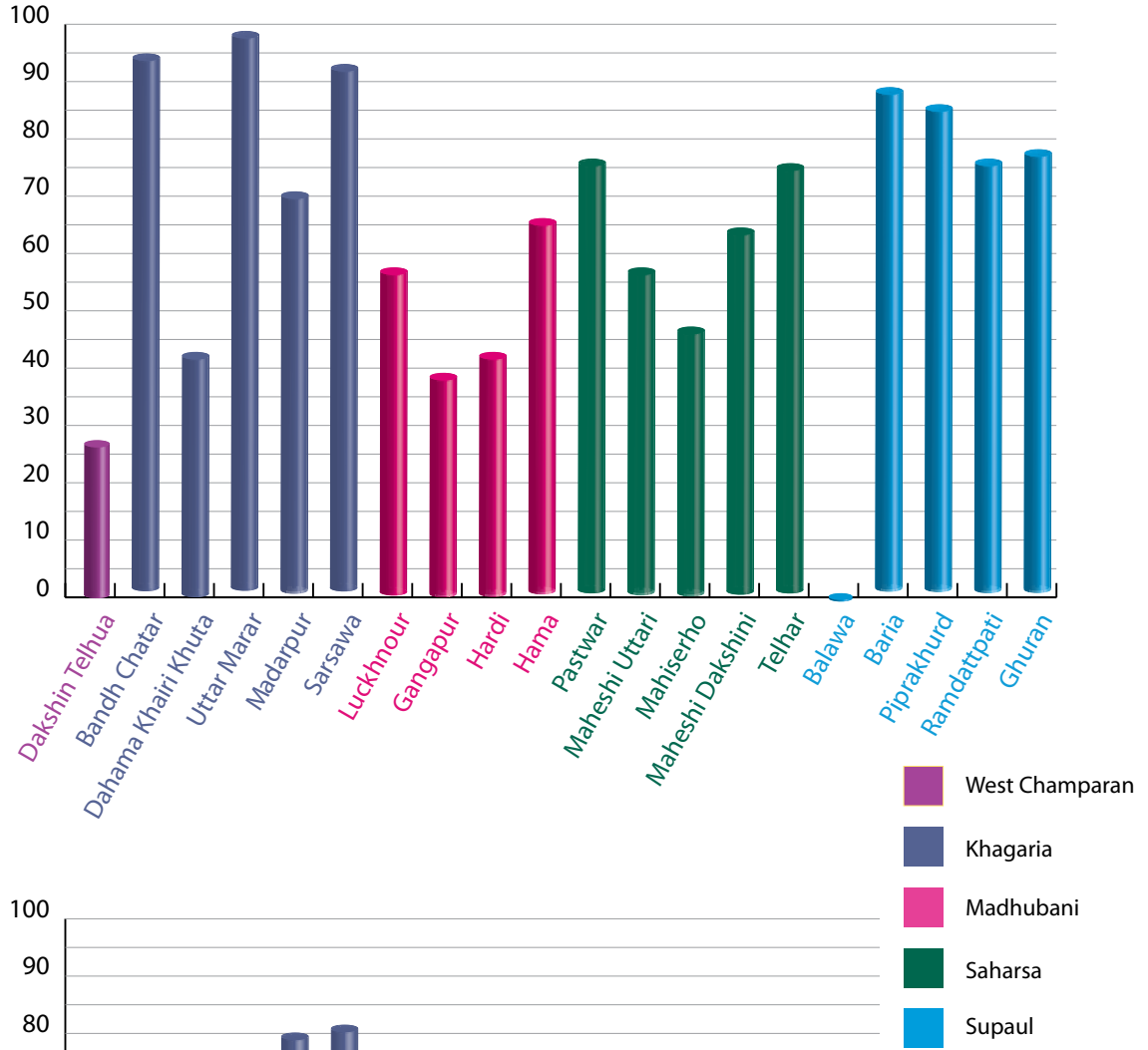


COLIFORM

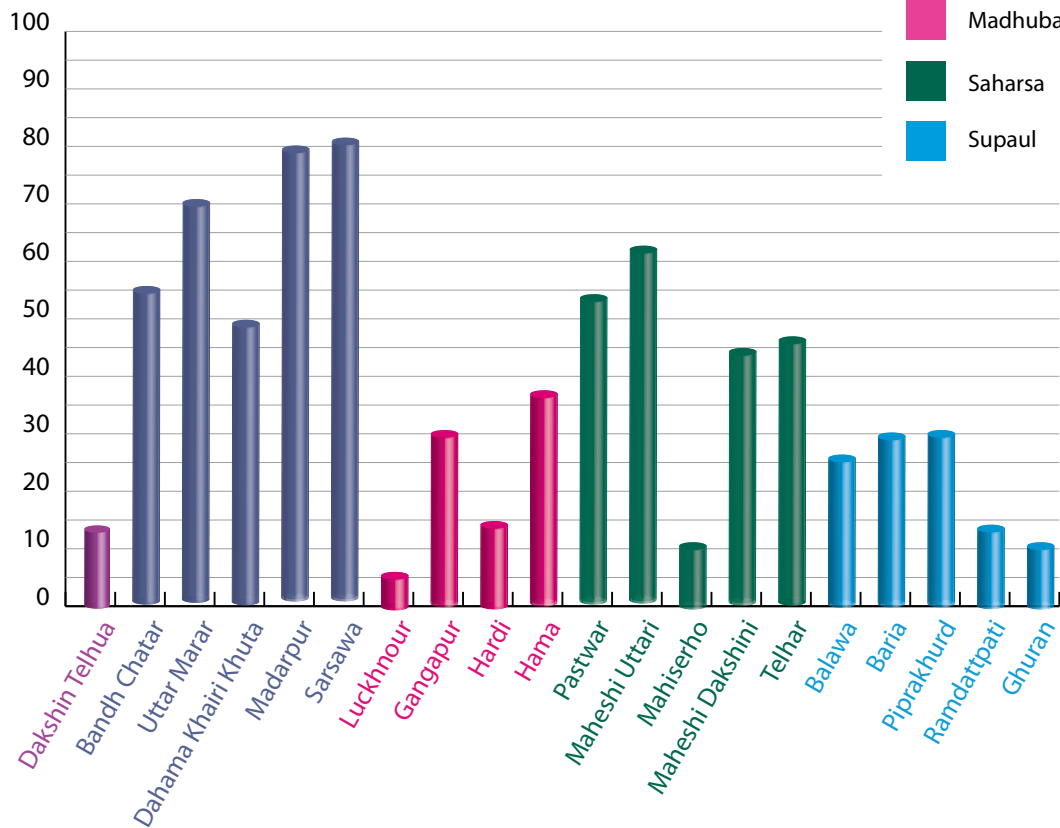
2008

Handpumps - Percentage of samples beyond desirable limits

IRON



COLIFORM

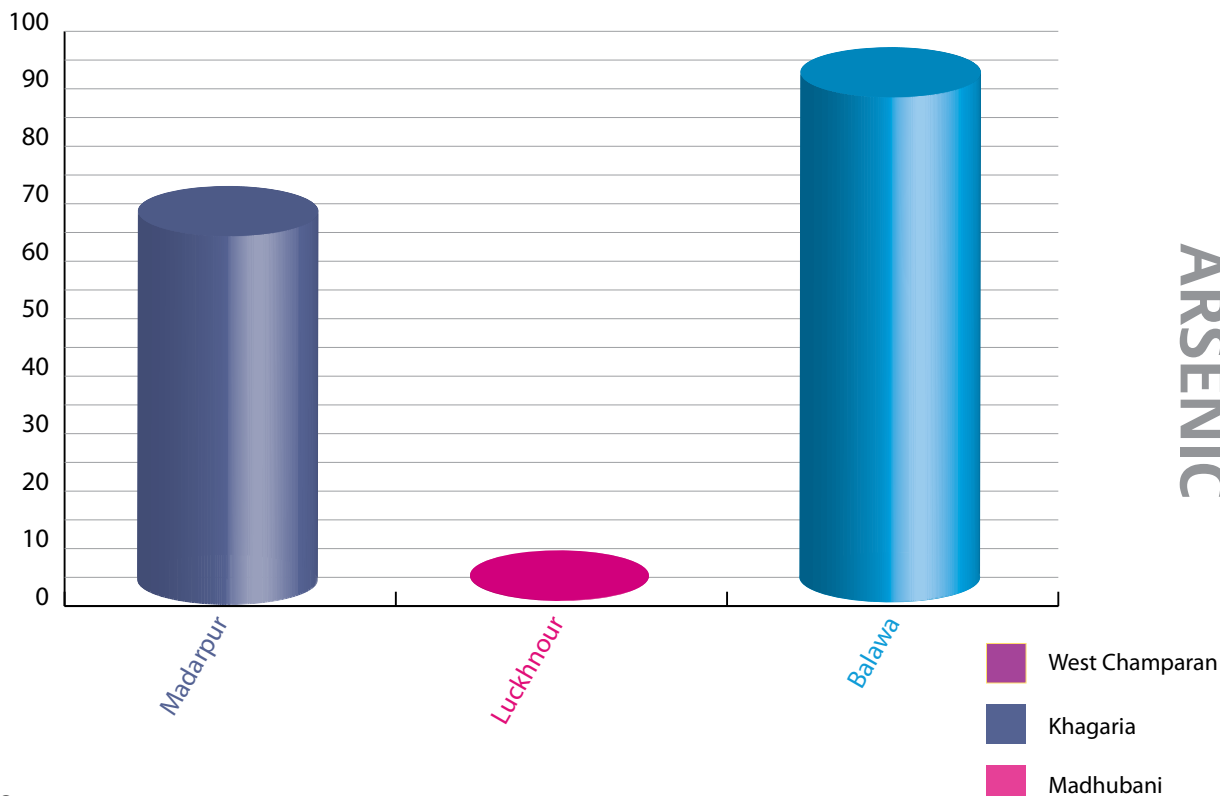




ARSENIC

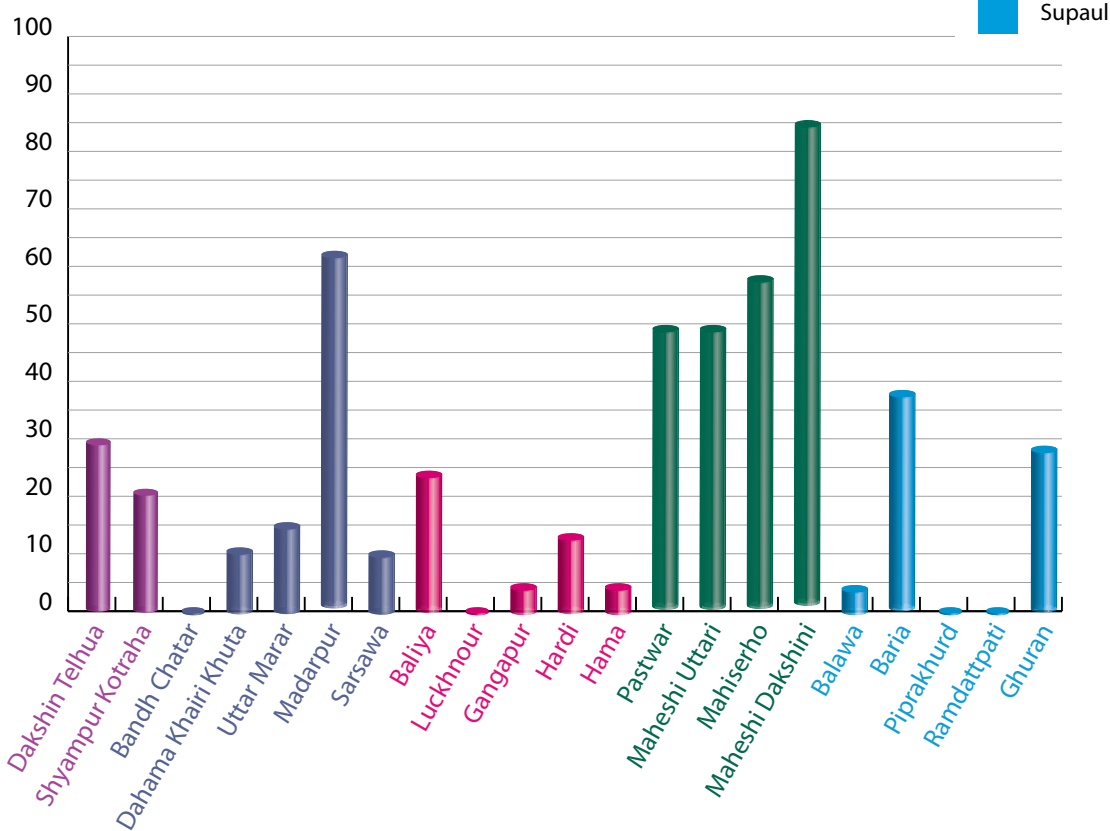
2008

Handpumps - Percentage of samples beyond desirable limits



2010

Handpumps - Percentage of samples beyond desirable limits

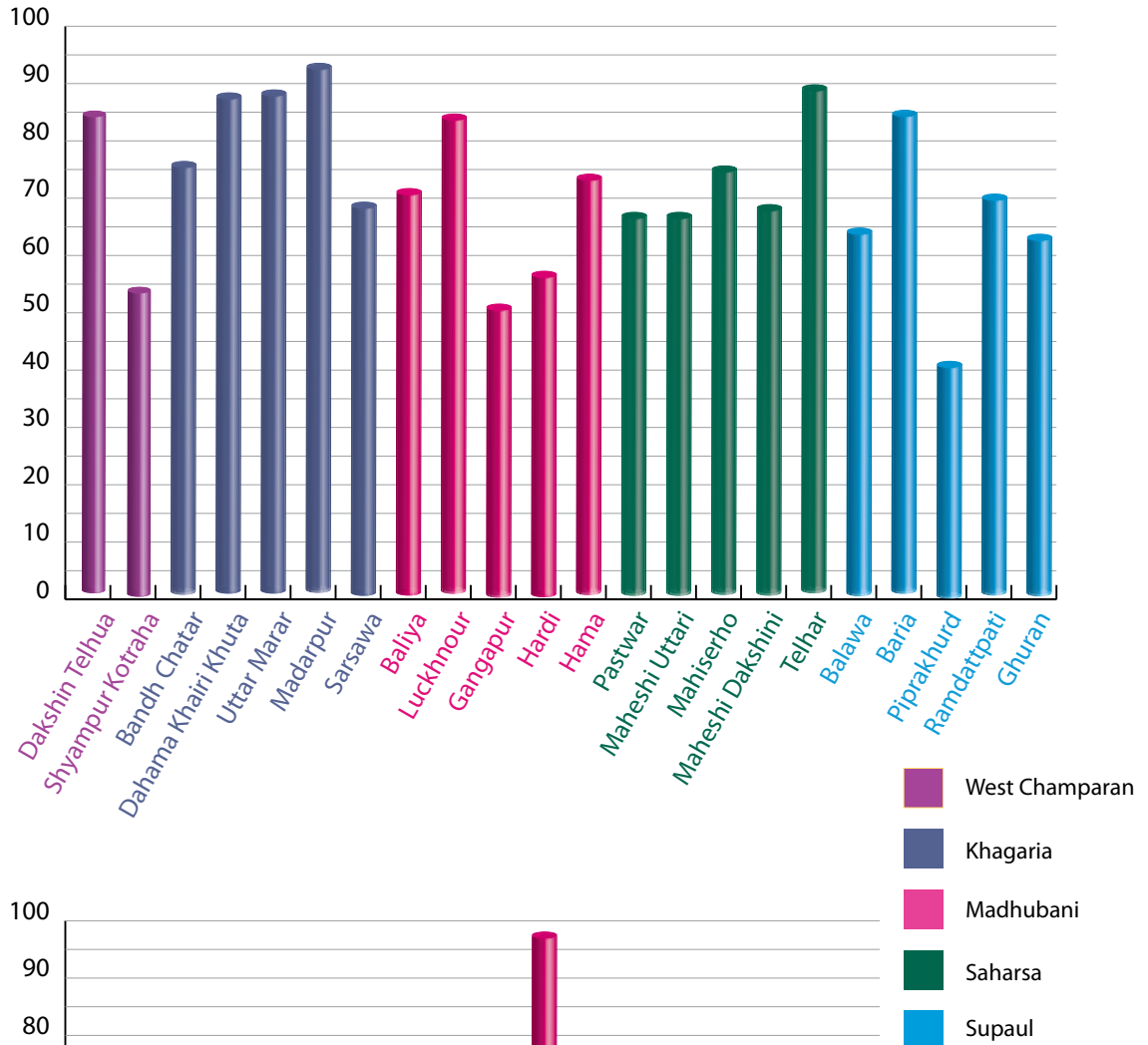


ARSENIC

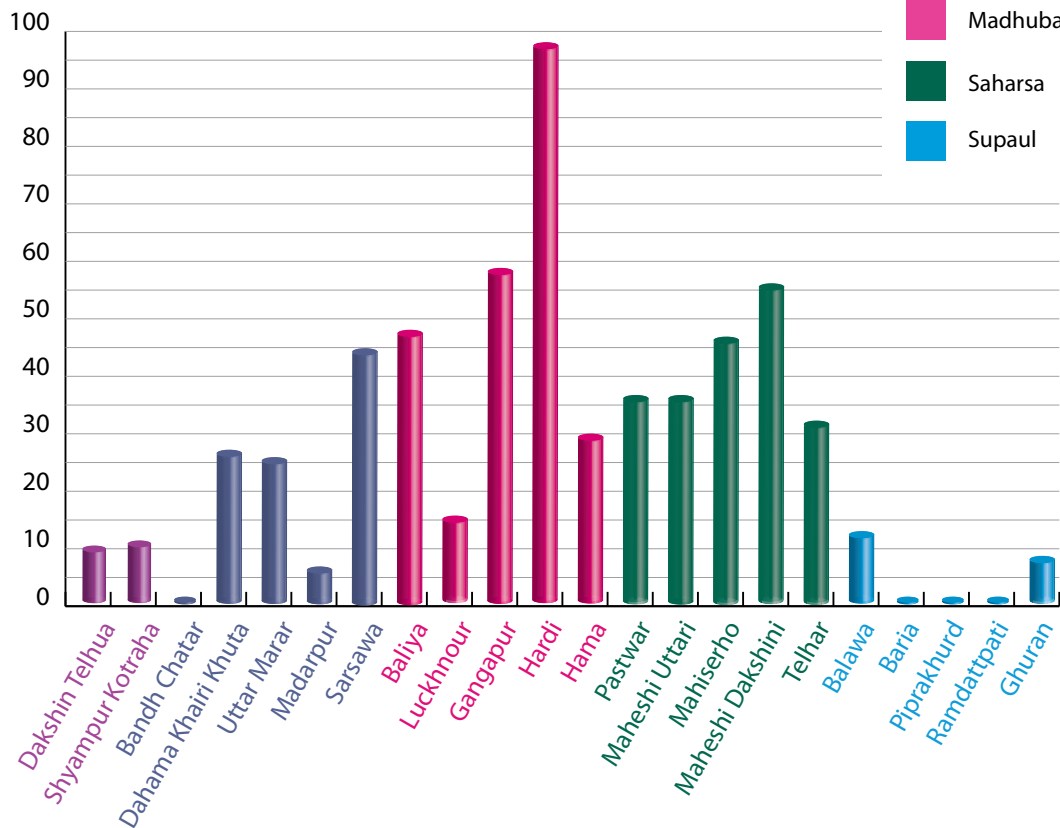
2010

Handpumps - Percentage of samples beyond desirable limits

IRON



COLIFORM





MPA staff has been persistent with water testing and conduct them on a regular, ongoing basis. Great importance to water testing is laid at the pre and post well revival process. MPA has also revived the traditional method of testing water for the presence of iron. It encourages people to crush the leaves of a guava tree and dip it into the water to be tested. Ideally, the water should be in a transparent container like a glass used to drink tea so that the test results are visible to the naked eye. Water that is rich in iron turns purple.

The detailed water quality analysis for the sampling carried over three years yielded some interesting trends.

The presence of coliforms in almost all the samples of unused dug-wells does not prove to be very surprising. Unhygienic conditions and lack of sanitation facilities along with a high water table enable the rapid spread of bacteriological contamination in groundwater. However, the presence of coliforms in significant number of hand pump samples can be considered as an abnormality. Alluvial systems consist of sand, silt and clay and act as a natural filtration system comparable to a commercial slow sand filter. Therefore the presence of coliforms at depths is a cause for worry. The presence of coliforms in groundwater tapped by handpumps can be attributed to the faulty design and faulty headworks of the handpumps. This provides a direct connection between the surface contaminants and groundwater without having to pass through the natural filtration system.

Results for the presence of Iron and Arsenic do not follow the same trend as that for coliforms. In fact the trend reverses in terms of the presence of these contaminants in dug-wells and hand pumps. Iron is present throughout all the handpumps that have been sampled. However, dug-wells do not show the same trend with most dug-wells being free of iron contamination. The handpumps, on the other hand show a clear trend of a widespread presence of iron in groundwater

above permissible limits. The presence of iron in handpumps and its absence from dug-wells, both of which are in close proximity, can be attributed to the difference in aquifer conditions that the source is tapping. While the handpump is tapping groundwater that is completely isolated from the atmosphere, the dug-wells are open to air, and therefore to oxidizing conditions. Iron dissolved in groundwater, gets oxidized to form insoluble residue which then settles to the bottom of the dug-well. Arsenic also follows similar trends when compared between hand pumps and dug-wells. Revived dug-wells do not show the presence of Iron and Arsenic if the water is collected from the surface of the well.

The process of well revival

Prevailing over opposition, MPA began the process of well revival. The process, of course, has not been uniform in all the districts and each has a story to tell.

The exploratory phase began with locating wells, analyzing which wells could be revived, extent of groundwater contamination, extent of desilting required, and responsibilities to be shared by MPA and the community.

The process of well revival has been accompanied by detailed documentation of issues like: owner/s of the well, details of the community, listing of all sources of water and their level of interconnectedness, water usage patterns, history of the well, well characteristics, persons responsible for well maintenance before revival, maintenance details, persons responsible for revival, efforts and costs incurred by the community, costs borne by MPA, response to MPA interventions within the community, results of water testing both pre and post revival, frequent follow up details, well usage pattern post cleaning, and the names of people responsible for maintenance post-revival.

These details are seen as essential to improving the effort – learning from past practices and present experience. The process of documentation itself is also considered as a guide for the staff to comprehend the dynamics of social interventions.

The learning from past practices enabled MPA to shift its focus from revival to repair and use of the dug-wells.

On the whole, the dug-well work had created conducive atmosphere, which was instrumental in bringing people together to deliberate and develop a collective strategy to overcome their drinking water problem. Villagers got sensitized regarding the limitations of the present drinking water system and became conscious about the 'alternatives' that had the potential to yield safe and secure drinking water. Revival of dug-wells facilitated intergenerational transfer of indigenous knowledge, which to a large extent was on the brink of extinction. The resurfacing of the knowledge further impacted on the general perception regarding dug-wells and also led to repairing of old dug-wells as the main source of drinking water. Ever since the need to revive and repair the destroyed dug-well has been evolving. Mixed impact of the dug-well initiative has prompted the campaign to further evolve its design for an enhanced impact as a result a locally sanctioned flood resistant dug-well has been developed for the region. In order to

ensure quality drinking water. Designing of flood resistant dug-well.

Saharsa

The story of well revival in Nagarpatti *tola* in Pastwaar *panchayat* (Saharsa) that lies across the Kosi embankment is interesting. In March 2008, the villagers revived two dug-wells that were not in use for 20 years. They benefit 125 families living in its vicinity. Phulo Sah, a village elder, says that MPA got them started and paid part of the expenses. "The villagers did a major amount of work," he says. "A motor was used to drain out the water and mud and desilt the well. The draining stopped when the layer of sand came to the surface. Soon groundwater began to emerge. It was far cleaner than what we had in the well earlier. The villagers used bleaching powder to rid it of contaminants. The procedure was followed two more times. But we still need to do a lot more work, as the area around the well remains dirty and the way some people access water is incorrect. They use dirty buckets and are careless about leaves and other items falling into the well. But others are intervening about it." he adds.

On the whole, the dug-well work had created conducive atmosphere, which was instrumental in bringing people together to deliberate and develop a collective strategy to overcome their drinking water problem



facilitate its spread, possibilities of linking it with Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) scheme has been explored. Myths and skepticism surrounding the appropriateness of dug-well have started getting debated amongst villagers resulting in its slow processed exclusion. Revived and maintained dug-wells are slowly getting the recognition on the basis of certain local indicators for instance, facilitating digestion, odourless and pleasant taste, and sparkling clean water. The benefits accruing from dug-well has prompted revival of local practices of dug-well management to

In Mahishi Uttari *panchayat*, only one dug-well of the four identified for revival has been revived but the effort has been spectacular. Cutting across social and cultural divides, the community gathered together and collected funds. With a bit of help from MPA and the contribution of labour by many villagers, the well got cleaned and today the water is safe and so are the surroundings. Villagers say that as this well is situated on the roadside, it gets used by over 500 people who traverse this route daily with head loads of their harvests.



Dug-wells revived and repaired by MPA

District	Dug-well Reviving	Dug-well Repairing
Supaul	21	07
Saharsa	41	07 (Six through MPA and one through collective effort)
Khagaria	12	05
Madhubani	25	14
West Champaran	10	08
Total	64	41

In Telhar *panchayat* of Sarhasa, Kumkum Devi, MPA field associate, says that women have benefitted the most from the revival as they have begun to access clean water and have found a place to congregate and bond with other women. “However”, she adds, “the villagers remain unconvinced. They welcome the idea of rejuvenating dug-wells but are hostile to cleaning it themselves. Despite reviving and using two dug-wells, undercurrents of tension persist.”

Supaul

In Supaul’s Lalganj village in Balwa *panchayat*, situated within the embankments, life is about living with sullen sand and silt in summer. Crops of wheat and corn battle to survive in the harsh sun and coarse sandstorms; only the marijuana plants grow unperturbed. Women, who carry bulky head loads of grass, twigs and harvested crop, far outweighing their thin bodies, seek to walk in the narrow margins of shade under trees where an assortment of cattle also tries to rest. And, along the many earthen embankments, scantily clad children play, unmindful of the seething sun and swirls of white silt that engulf and settle on their bodies. During monsoons, the scenario changes and the entire area swells up with knee high water. It stands in complete contrast to what it looks like in summer.

Like the seasons, the tale of well revival has many turns and twists to it. Though there is a surfeit of hand pumps here people restrict the

use of its waters only for bathing and washing clothes. They use well water for cooking, despite it being unclean. The reason: hand pump water is brackish due to its high iron content and food cooked with its waters has a black appearance. The process of well revival here began with the cleaning up of one well in March 2008.

The well belongs to Debu Poddar, a resident of the village, but is now used by the community. It was built in 1967 but fell into disuse for the last 20 years as its water was unfit for human use. Raso Devi, wife of Debu Poddar, however, qualifies, “all the women knew that the water of the well was unclean before the revival but they used it anyway fearing the water of the hand pumps to be worse.” The process of reviving Debu Poddar’s well has been an elaborate one. MPA staff helped during the first round. Villagers took over from there and subsequently cleaned it two more times. They were careful to conduct pre and post revival water tests. Once they certified it clean, 25 households have begun using it. Travellers to Madhubani who use this route also drink the water of this well on their way. Village estimates place the usage as 125 people in the village and 200 travellers per day

The well *chabutra* (platform) has started to regain its importance as a place where women now get together and discuss personal and community concerns. The revival of well therefore entails the re-appropriation of a common space in the neighbourhood, that was abandoned with the prevalence of individual hand pumps.

Laxmi Narayan, a contractor, says his reasons for supporting MPA may sound strange. This is another twist to the tale. He says some influential people in the community only allow water concerns of the village to be addressed (by the government) when they are compensated. These people, he comments, believed this to be true also of MPA and tried to deal with them the same way. They sought personal benefit and mileage from them. But they soon saw that this was not to be and gave up. MPA did not desist, and at that point other forces in the village supported their effort. On the other hand, villagers from several places have repeatedly caution MPA against attracting hostility, as the power centres comprising of elected representatives and contractors quote extravagant figures to repair and construct new wells as compared to MPA. This might result in tension, they fear.

Khagaria

Also in Khagaria, the playground of Kosi, Bagmati, Bhudi Gandak and Ganga, a lot is happening over wells.

After the harvest, some people started cutting the husk near the well, as it is the only common empty place. Other people reacted, saying that the cleaned well became an asset for them, and refused to let it get dirty by the husk powder. A waltz of interests started. The husk cutting activity was initiated and interrupted several times, till an agreement was reached. As per now, the family responsible for the well being coated with husks of harvested wheat recently cleaned the water.

It would not be the first time that clashes happened because part of the village felt excluded. Dighni is a caste-homogenous village, but hierarchy exists, mostly due to economic-based power structures. One possibility of what happened in Dighni is that the well-off families did not react positively to MPA efforts of inclusion, as they did not want to share a collective drinking water source, or they wanted to assert their separate status. Finally, they changed their mind, maybe realizing that something relevant for the village was happening. One explanation could be that,

Villagers from several places have repeatedly caution MPA against attracting hostility, as the power centres comprising of elected representatives and contractors quote extravagant figures to repair and construct new wells as compared to MPA



As part of their advocacy strategy, MPA hold block meetings to talk about water with administrative officials. In Chautham block, elected members promised to earmark funds for well revival from state budget, a development that spells hope for well revival at a larger level.

A very interesting story happened in Dighni village in Chatar *panchayat*, where a 40 year-old well has been revived and 125 households have access to it. Local resident Manki Devi says though its usage has increased three fold

However, the challenge lies in maintenance.

ironically, they dirtied the well, so that they clean it, and *de facto* become part of the process. This example explains why the campaign stresses about field associates understanding the social context and correlating different events within a community. It is the coordination team that has the responsibility of helping the staff to learn about social dynamics and become a resourceful social animator.

Resistance on the other hand is coming from Belour village and Khara *tola* in Sarsava *panchayat* in Khagaria. In the latter, caste politics



plays a huge role and the MPA staff had to intervene in many cases where well revival became a contentious issue. The results have been happy. A member from each house has been co-opted to help in the revival of wells, dissolving caste rifts and the fundamental concept of evolving cohesion through community-based work is now becoming visible.

Madhubani and West Champaran

In Madhubani well revival efforts are catching on. The tally for the *panchayats* is: 3 in Lucknaur Paschimi, 2 in Harna, 3 in Hardi, 3 in Gangapur and 3 in Balia. The number of wells in each of these *panchayats* is 15, 8, 6, 41 and 23 respectively. As against this, the number of hand pumps is 189, 247, 423, 575 and 189 respectively.

Reviving a dug-well in Panda Tol in Bhabham Village Harari panchayat in Madhubani has been an experience to learn from. First of all, the campaign began to act as a facilitator in helping the dialogue between the six families owners of the well. Because of other conflicts they were unable to organise themselves as a group to proceed with the renovation work. At the outset of the discussion, the six families were asked to collect money as their contribution towards the revival and renovation of the well. "When they agreed and collected the money to meet their share of contribution" MPA field associate, Shubhita Jha, comments, "I felt my goal was accomplished, and my efforts in facilitating their dialogue rewarded."

In Dakshin Teluah, Bintoli and Badai villages in Dakshin Teluah *panchayat*, Nautam block in West Champaran, well revival efforts have been completed. Chatu Ram of Dakshin Teluah village says a 15-year old well has been revived and 300 households draw water from it. Kamal Ram, a member of a well watch committee says that he, along with five others, keeps guard to see that the wells are not contaminated.

In Bintoli village, populated by fishermen, people contributed Rs 1,000 to clean a well and requested MPA to supplement their funds with an additional Rs 500. They cleaned the

well themselves and now members of the 100 households there use it. In Badai *tola*, one well has been cleaned; villagers have collected Rs 3,500 for the cleaning where MPA only contributed for Rs 1,000.

Sarla Devi, talks of the efforts of the villagers in Naurahi village to clean a well, which is now being used by 25 families. "They worked in groups of 12 in two lots and cleaned the well and not money was needed as they only cleaned the well and cemented the cracks. The water we now have in the well is sweet and cool."

Water filters

MPA has been promoting the use of specially-designed mud water filters made out of locally available clay, sand, charcoal and brick. The idea is to counter high levels of iron in groundwater. In structure it is similar to the steel water filter available in all Indian cities and towns, except it is made out of mud. The process is very simple. Water from the hand pump is poured into the top container that purifies it. The filter requires cleaning every week to ensure that the purification process is intact.

The *matka* filter, as it is designed to replicate the functioning of a well that has natural filters to rid groundwater of all impurities. While the natural filters in the well rid the water of all contaminants, the *matka* filter is capable of eliminating only the most common type of iron present in our area. But as a majority of the people still use hand pumps, it can play a useful and positive role in reducing health ailments. The advantage is that it is cheap to make, can be locally manufactured, and is easy to use and maintain.

The increasing demand for individual *matka* filters is an indicator of the local acceptance of the remodeled version of the filter. On assessing the demand, MPA streamlined the production of *matka* filters by adopting a business model, where the capacity of the local potters had to be enhanced for ensuring quality product and its longevity. Installation of *matka* filter in schools and play schools enhanced

consciousness within the rural households. As a future strategy, the intervention in these two sites will be further intensified. The effort will be to explain the functioning and benefits of the filter to the students depending upon their extent of comprehension. The inclusive approach of the campaign has been responsible for the introduction and acceptance of the filter in areas where the technique was either not present nor popular, for instance in Khagaria, Madhubani and West Champaran districts. The local experience of accessing safe water during floods provided confidence to people to accept yet an alternative technology developed by MPA. In addition, the demand for *matka* filters has provided the local potters with an opportunity to strengthen their traditional livelihood practice and the campaign has to take the initiative to ensure the sustenance of this outcome. The campaign has come out with different variants of matka filter on the basis of removal mechanism of contaminants – iron; iron and microbiological contamination; arsenic, iron and microbiological contamination



The lineup of activities of well revival, water testing and the promotion of *matka* filters and working on them simultaneously has proved useful for MPAs vision of integrated water management. It has enabled MPA to do away with the ‘either-or’ approach and amalgamate a range of inter-connected issues that need to be addressed together as a whole and at the same time as local alternative practices to access safe drinking water.

The increasing demand for individual matka filters is an indicator of the local acceptance of the remodeled version of the filter





Status of Matka Filters developed in five districts by MPA

District	Panchayat	Number of installations	Beneficiaries (2009)	2010-11
Supaul	Balwa	18	1,661(individual)	77
	Piprakhurd	16	2,160 (individual)	
	Ramduttpatti	18	1,205 (individual)	
	Bairiya	18	4,890 (individual)	
	Ghuran	18	2,300 (individual)	
	Gramyasheel	2	Catering to the drinking water needs of a household of	
Saharsa	Mahishi Dakshini	7	2,650 (individual)	158
	Mahishi North	17	4,075 (individual)	
	Pastawaar	11	1,940 (individual)	
	Mahisarho	5	1,620 (individual)	
	Telhar	9	1,875 (individual)	
	Kosi Seva Sadan	2	Catering to the drinking water needs at the organizational level	
	Block office	1	Catering to the drinking water needs at the block office level	
	Health Centre	1	Catering to the drinking water needs at the health centre level	
Khagaria	Mahishi Police Station	1	Catering to the drinking water needs at the police station level	
	Sarsava	7	836 (individual)	81
	Uttar Marrar	2	321 (individual)	
	Dhahma – Khairi – Kutaha	2	285 (individual)	
	Band Chatar	4	464 (individual)	
	Madarpur	2	261 (individual)	
Madhubani	Harna	12	60 (household)	230
	Harri	11	56 (household)	
	West Lakhnaur	11	140 (household)	
	Baliya	10	67 (household)	
	Gangapur	10	182 (household)	
West Champaran				22

INNOVATIONS for sensible land and water economics

All MPA programmes are underpinned by the concept of sustainable natural resource management. While its earlier projects fell within the purview of water management, two of its more recent innovations take into account a combination of land and water economics. The two recent entrants into the MPA activity ambit are: *Shri Vidhi*, based on the System of Root Intensification, and eco-sanitation.

MPA and *Shri Vidhi*: The rationale

The System of Root Intensification (SRI) applies customised and controlled management practices in paddy cultivation for substantially higher yields. Bihar is a predominantly an agricultural state with nearly 90 per cent of the population living in rural areas and depending directly or indirectly on agriculture. The state possesses about three per cent of the total cultivated area of the country and eight per cent of the country's population.

lakh hectares were damaged by August 2007. (<http://nidm.gov.in/PDF/DU/2007/August/27-08-07.pdf>). The figures of the total devastation went up manifold by the end of October. In some of the districts the affected population not only lost *kharif* crop but were unable to take *rabi* as well, thereby exposing the already distressed community into a vicious cycle of debt based remittance. The pattern of land holdings and its fragmentation has also been one of the reasons for the decrease in the efficiency of agricultural operations in Bihar.

Hence, the campaign strongly believes in developing a system that pursues innovative and sustainable agricultural intervention which needs to be

- Incremental
- Receptive to people's perceptions and viewpoints
- Innovative as well as being contextual and logical in its approach

All MPA programmes are underpinned by the concept of sustainable natural resource management. While its earlier projects fell within the purview of water management, two of its more recent innovations take into account a combination of land and water economics



Annual flooding is one of the delimiting factors that has exacerbated land degradation and created a host of economic and social problems. During the floods of 2007, several districts in the flood plains had more than half their gross cropped area exposed to the wrath of floods. In the affected districts Darbhanga, Samastipur, Begusarai, East Champaran, Madhubani, Muzaffarpur, Khagaria, Supaul, West Champaran, Nalanda, Madhepura, Vaishali, Sitamarhi and Katihar, nearly 9,864 villages in 225 blocks were affected where crops worth over Rs 701.93 crores standing on 15.88

- Knowledge based focusing on disseminating researched and acquired knowledge amongst the beneficiaries and
 - Easily comprehensible and conveniently replicated by the farming community
- Therefore, the innovative method of *Shri Vidhi* paddy cultivation was piloted in north Bihar amongst 36 farmers across five flood prone districts, namely West Champaran, Madhubani, Saharsa, Supaul and Khagaria. Here, we underline steps being followed in implementing the pilot and also those that we intend to:
- Documenting the relevance of innovative paddy



cultivation in terms of need for summer paddy, need for increased productivity given the sharecropping system of *batedhari* and need for food cultivation, instead of cash crop

- Documenting the experience of cultivating summer paddy of 2008 - 09 through intensive field action research
- Popularizing innovative paddy cultivation in five districts through mass awareness campaign
- Preparing a calendar for adopting innovative technique for cultivating paddy during summer and *kharif* season
- Preparing a package of practice for undertaking innovative paddy cultivation, with the aim of transforming the present practices toward the organic methods.
- Training of field associates and farmers
- Developing tool/tools to extensively document the intervention
- Developing farmers' federation for experience sharing, and as agricultural platforms.
- Facilitating further expansion of the initiative
- Accruing benefits from the livelihood opportunities through innovative agricultural practices
- Exploring the option of establishing collective strength of farmers by strengthening
- Linkage between innovative paddy cultivation and Eco-san for the mutual benefit (use of urea, increased acceptance of the Eco-san concept)
- Local irrigation facilities

Government's policy and attitude towards tackling agricultural losses during recurring floods and intermittent drought-like situation

Before launching *Shri Vidhi* in its campaign districts, MPA conducted intensive training sessions for farmers who agreed to take on the SRI initiative with the help of the Gaya office of Delhi-based organisation PRADHAN. MPA staff has been interacting frequently with farmers and their families, in order to understand better their individual experience of cultivating paddy through the *Shri Vidhi*.

The wide-ranging experiences of the pilot are being assimilated. There are clear indications of an increase in the yield. For instance, in West Champaran, Saharsa and Supaul, the yield has

increased from 60-90 kg per katha (cultivation through traditional approach) to 120-200 kg. The yield range is spread out owing to the quality of land that the farmer had set aside for the pilot. The initial skepticism amongst the farmers and the slight delay in executing the pilot had restricted the effort from being practiced in the fertile and appropriate agricultural lands. The increased productivity of the summer paddy has generated interest of the local farmers and they are inclined to adopt the new approach of cultivating summer paddy in the region.

The preliminary experience has been positive and it demonstrates the potential of the initiative as an alternative practice in fighting against food insecurity, poverty and overcoming the miseries of the annual devastation in the flood prone regions of north Bihar. Therefore, to bring about an agricultural revolution incrementally, there is a need to begin work with the intention of increasing productivity by changing the cropping pattern through innovative and contextual interventions particularly as summer crop across all the five MPAs working districts – Supaul, Saharsa, Khagaria, Madhubani and West Champaran

Ecological sanitation or Phaydemand Shauchalay

Phaydemand shauchalay (beneficial toilet) aka ecological sanitation is a fresh and holistic approach to sanitation. It treats excreta as a valuable and manageable resource. It protects and conserves water. It sanitizes faecal material. This definition of *phaydemand shauchalay* sums the intent behind promoting this particular sanitation facility in the flood prone areas of north Bihar. This facility is highly contextual to the flood prone areas of north Bihar as it overcomes the limitations confronted by people using the conventional toilets during floods and under normal circumstances.

The initial response from the people was dotted with skepticism, inhibition and extreme resistance. Lack of knowledge about the concept of *phaydemand shauchalay* was the main reason for a disapproving response from the field. The dominant relief oriented notion of development processes channelized the outlook of the people and the alternative sanitation facility was

Status of Phaydemand Shauchalay work by MPA in five districts

District	Phaydemand Shauchalay
Supaul	11
Saharsa	10
Khagaria	11
Madhubani	20
West Champaran	10
Total	61

expected as a relief exercise. The handling of excreta above the ground and its periodical shifting (when stored in temporary storage facilities) was opposed the most by people as it entailed handling other's excreta. Household consumption of food grains and vegetables treated with fertilizer out of human excreta was vehemently denied. The construction and usage pattern of *phaydemand shauchalay* was yet another challenge that was met with extreme uncertainty, especially for floods and in water-logged areas.

The resistance was from people who religiously followed open defecation and those who depended on others to clean the

Despite the reluctance, the campaign continued pursuing *phaydemand shauchalay* as the effective and sustainable alternative sanitation facility in the flood prone areas. As a strategy, three different prototypes were developed - permanent, semi-permanent and temporary. The intention was to demonstrate to people by using the facility.

Presently, three different typologies of *phaydemand shauchalay* have got developed in the five districts - permanent, mobile facility with pan and without pan, and semi-permanent. Reasons for developing different prototypes of the same utility were, to make the utility feasible for diverse socio-economic groups, cost appropriateness, proportionate to space availability, compatibility during floods, and easy to construct. Collectively exploring the different facets of the utility helped the campaign to address the concerns of the community effectively which has transformed mindsets irrespective of the socio-economic background. Community space in the exploration has resulted in production of *phaydemand shauchalay's* pans

Presently, three different typologies of phaydemand shauchalay have got developed in the five districts - permanent, mobile facility with pan and without pan, and semipermanent



septic tank. Open defecation is a practice of collectivity which is driven by a well framed psychology towards collective open defecation. It is not considered as an activity of isolation instead a collective action. Secondly, handling of excreta has always been considered as a menial and impure activity, and to be carried out by specific social groups. Any measure to disrupt this social interaction/relationship is met with utmost resistance and opposition. Simultaneously, the promotion of conventional toilet by the state and other development organizations also impeded the acceptance of *phaydemand shauchalay* as an alternative facility.

locally, which earlier were being sourced from Bangalore, as a result the cost of the utility has been brought down substantially. On the other hand, different local designs have emerged as per the economic position of the user and exploration helped in developing a mobile *phaydemand shauchalay* especially for communities staying inside the embankment. Women have shown interest in the designing of the facility and it even prompted the district administration at Khagaria to explore the possibilities of adopting MPA's model of *phaydemand shauchalay* and piloting it in two flood prone hamlets through MGNREGA funds.



section

4

Finding our Way

■ THIS FINAL SECTION PULLS TOGETHER THE DISCRETE CAMPAIGN ELEMENTS, LOOKS AT GOOD PRACTICES AND FUTURE PLANS

ON TIDING over the water, sanitation and livelihood crisis

This volume has documented just how unrelentingly harsh life is in the northern Bihar plains during the monsoons. The deluge claims thousands of lives every year. Homes, land and livestock perish, and all certitudes are gone.

The aftermath of the deluge, like an earthquake scenario, is riddled with aftershocks. People are forced to carry on with their lives in extremely difficult conditions, food stress, persistent illnesses, few material possessions, and fewer reassurances.

Under these circumstances, it is only the resilience and tremendous courage of the people that help them survive. There are no long term developmental strategies that assist them tide over their lives crises, and no livelihood alternatives with the exception of migration.

MPA believes that the management of natural resources needs to be contextual to the ecological history of the region, equitable from a socio-political point of view, and economically and culturally appropriate. It needs to regulate resource consumption so that both present and future needs are addressed, and to aid the sharpening of coping mechanisms and adaptation skills based on traditional knowledge and on appropriate innovation.

In a paradoxical way, MPA programmes have been novel experiments though traditional and time tested techniques that have been used. This is because some of the practices it seeks to revive have been forgotten over the years. So in many ways, for MPA it was like trying them out the first time and travelling on unchartered waters.

MPA believes that the management of natural resources needs to be contextual to the ecological history of the region, equitable from a sociopolitical point of view, and economically and culturally appropriate



Distress migration is part of people's lives here and impacts the women who are left bereft of family lives and huge responsibilities of fending for their homes, children and livestock.

In the six years of its existence, MPA has made a significant contribution of creating an enabling environment to help people address their drinking water, sanitation and livelihood concerns.

MPA hopes that this will be the beginning of the a process that will enable people to make decisions about their concerns. It aims to set in motion a mass movement where people's voices shape decision making.

It would not be wrong to say that MPA has learnt and is learning from its experiences and is gaining new insights into the challenges such programmes face, and how to overcome them. MPAs inspiration to go on comes from the people who encourage and support their efforts.

There was resistance to MPAs ideas to begin with. But MPA members were convinced about the campaign and what it stood for and stood steadfast by its principles of enabling people to take decisions to manage their resources. They did not succumb to pressures of giving readymade products or services to the people.



Their efforts have made people realize they themselves are capable of managing their natural resources and finding redress to drinking water and sanitation problems. They are now an active and collective group in all MPAs water activities. This is an extremely significant achievement in an ethos where dependency on state largesse and relief aid had become the norm.

By creating forums like jal samitis, jal goshtis, jal samvad yatra and bal mandalis, MPA has facilitated platforms where people can congregate, identify and discuss problems related to water, assert priorities and seek solutions. These forums have also helped people see the linkage of water issues within the MPA programmes and how each impinges on the other.

Rainwater harvesting in this region was an untested area but MPA ventured into it and enlisted the support of people in all the five districts. People who fought off efforts to get them to drink rainwater fearing they would contract goiter, started drinking it and giving it to their children. A majority of its users say certain health ailments have dropped dramatically.

Most important, MPA has brought the realization that long term, integrated and sustainable water and sanitation management is vital to addressing the crisis in the region. Its spiral activities link key water concerns that need to be addressed.

Core challenges and future plans

MPAs challenges are many. While people have accepted its vision and its programmes, there is still resistance to some of its initiatives. While the hostility to rainwater harvesting has been overcome, some people are still reluctant to revive wells as the lure of hand pumps is great. Changing people's attitudes still remains a key challenge for MPA.

In the arena of rainwater harvesting, its challenges are three-fold. One, it needs to authenticate and certify a fall in health problems due to consumption of rainwater by health

authorities. Two, it needs to expand its scope of activity in rainwater initiatives to the entire district and state and regional level. Three, there is need to focus on more and larger storage options for rainwater harvesting, to allow people to make use of it for longer periods.

The coordination team point out that major challenges remain in areas like maintenance of revived wells, clean exit routes for water in the area surrounding the well, formulating rules for well usage, cost distribution between MPA and village communities, and issues relating to wells under dispute.

In the case of water filters, mass production and marketing is a challenge. Also, there are problems of finding a suitable location for the filter – a place where it will not be broken. There is also the view that promoting its usage will work against discouraging the use of hand pumps.

Water testing needs to be intensified and taken across to many more districts. The campaign is working towards collaborating with the government agencies on this aspects. Its findings need to be shared among larger groups of people.

Phaydemand Shauchalay has evolved as a concept in the campaign areas, but for its larger acceptance and usage further mobilisation, linkage, dovetailing, monitoring and construction work is required.

SRI is still in the pilot stage and better preparedness for next year is what MPA is aiming for. Ongoing trainings for farmers, more staff devoted to farmer's support, partnership to implement the programme at a larger scale are some of the issues it wishes to address.

Burgeoning partnerships

MPA – ACWADAM

MPA has partnered with ACWADAM in developing contextual alternatives that will provide safe drinking water and sanitation to the people of the flood prone regions of North Bihar. The collaboration has worked further reinforcing and

advocating the functional paradigm of contextual alternative drinking water and sanitation practices across five districts of north Bihar, where work on alternative systems and knowledge management of groundwater resources was initiated six years back.

In the future, the work will also concentrate on identifying techniques and enabling processes for promoting source protection in the villages. Secondly, it will also develop processes for area and context specific decentralized planning

The endeavour will be to establish mechanisms that will facilitate access to safe drinking water and secure sanitation to improve the socio-economic and health conditions of the population residing in the flood prone areas. The goal will be to construct a congenial social environment with total coverage, by stimulating cooperative action and accountability to develop sustainable drinking water and sanitation processes that are replicable in other flood prone areas of Bihar and other states through local innovations and adaptations.

MPA – State Government

MPA through its local partner Samta in Khagaria initiated a collaboration with the district administration for widespreading the alternative drinking water and sanitation system in the flood prone region of the district. The initiative facilitated in recognition of MPA's work on alternative drinking water and sanitation for the flood prone areas and an effort was made by the district administration to link the works with MGNREGA, which had a mixed result. MPA through its local partners in Khagaria and West Champaran will be implementing the alternative sanitation system – *phaydemand shauchalay* in collaboration with the district Public Health Engineering Department (PHED) facilitated by DFID – SWASTH project and Stockholm Environment Institute.

Campaign : moving forward

The functional framework of MPA has evolved as a response to establish an alternative Water and Sanitation (WATSAN) model that will adapt to community needs. The framework will be made operational through a set of key processes given below:

Goal will be to construct a congenial social environment with total coverage, by stimulating cooperative action and accountability to develop sustainable drinking water and sanitation processes that are replicable in other flood prone areas of Bihar and other states through local innovations and adaptations





Key processes

- Understanding hydro-geological dynamics through a set of well-defined scientific processes, keeping in mind the context of WATSAN in the region in collaboration with ACWADAM
- Updating contextual knowledge and impact of unsafe drinking water and hazardous sanitation facilities
- Building a critical mass of human resources for dealing with the local problems and in executing need based interventions
- Developing community based practices for challenging the present trend and proposing an alternative approach
Exploring and developing low cost, innovative and relevant interventions with maximum returns for wider acceptability
- Creating points of reference within the state for facilitating learnings, adaptation and adoption

The proposed plan includes the following activities

- Safe drinking water 24 x 7
- a) Programmatic interventions
 - Rainwater harvesting system with temporary, semi-permanent and solutions for flood specific scenario
 - Water level monitoring for understanding the dynamics of groundwater
 - Water testing on a quarterly basis for assessing the water quality in the region
 - Documenting the process of collecting and compiling water results
 - Collaborating with district level government department – PHED for mainstreaming MPA's efforts in testing
 - Propagate water testing as a crucial process for ensuring safe drinking water to people affected during floods
 - Popularizing *matka* filters
 - Reviving, renovating and constructing flood resistant dug-wells as a safe and sanitary source for drinking water. Undertaking well revival, to enable people to access safe drinking water free from groundwater contamination, by promoting the value of the technology and its re-appropriation by the community, facilitating the transmission of knowledge regarding dug-well as an alternative drinking water source between generations and supported appropriately through a knowledge based approach using hydrogeology, data and participation.
- Localized sanitation facilities
- Developing concept of appropriate sanitation models for flood prone areas
- Popularizing and evolving localized *phaydemand shauchalay* models
- Promoting adaptive everyday practices to cope with challenging situation in terms of health, sanitation, food-intake, personal and environmental hygiene
- Advocacy
- Mandatory prototype for safe and secure drinking water and sanitation utilities during floods
- Alternative approaches for accessing safe and secure drinking water
- Innovative IEC for propagating alternative WATSAN practices
- Studying groundwater contamination and its dynamics to comprehend its impact on social, economic and health well-being of local population i collaboration with ACWADAM
- Encourage the social movement around water, and sensitize people on the issue of pure drinking water through marches, meetings at various levels, festivals, alternative media interaction, educational programs
- Building capacities of organization partners, field staff and diverse stakeholder groups
- Strengthening the capacities of the local craft persons (potters and bamboo weavers) and masons to develop the technologies at the community level
- Contextual water and sanitation management model for the flood prone areas of north Bihar
- Social development processes and
- Organizational development



FINDING OUR WAY

A look into good practices of MPA

In its journey towards a culture of community self-reliance and people's management of natural resources, MPA has established many milestones. Listed below are few of its successes, to give an idea of what the campaign has set out to do, its achievements, how it can consolidate its strengths, and which of its practices have potential for replication in both government and NGO programmes.

MPA began with a belief in people and personal change. It has acted as a change catalyst for people showing them why change is needed in the present methods of natural resource management.

Using sustainable water management as its starting point, the campaign has enabled change within community attitudes and practices

People have come together to affect solutions to their problems to access of drinking water during and after floods.

People now realise that government aid is not the only way to redress their problems and that self-reliance is the key.

For the first time, people are taking steps, both as individuals and the community as a whole, to redress their water problems without waiting or seeking government help.

They are beginning to see the visible and invisible links between the issues that MPA addresses in its programmes and why it is being addressed as a comprehensive whole.

They understand the logic of why MPA efforts are not limited to firefighting measures during monsoons but are comprehensive (linking a set of mutually dependent water issues) and long term.

People are combining traditional practices of water management with modern innovations as they take forward initiatives in rainwater harvesting, revival of dug-wells, water filtration, ground water contamination, water testing, *sri vidhi* and eco sanitation

People are beginning to reintroduce forgotten practices of water management and take stock of traditional practices from community elders.

MPA has used water issues to foster community cohesion and collective action. Slowly but increasingly, people are working together on rainwater and dug-well revival cutting across class, caste and gender barriers and also bringing in a sense of accountability

MPA partners, with wide outreach public programmes, have been building to the campaign's synergy and impact.

MPA success stories are largely the result of this loose, non-hierarchical coalition that address not only issues related to natural resource management but also inter-related issues of social exclusion, gender discrimination and violence against women, health, energy, education, governance and empowerment.





मेघ पाईन अभियान
Megh Pyne Abhiyan

Megh Pyne Abhiyan
C/o Dr. A. Sinha,
Rajvibhuti, Salimpur Ahara,
Patna - 800003,
Bihar
Ph: +91-9810307445/9973969616
graminunatti@gmail.com



Arghyam
599, 12th Main, HAL 2nd stage
Indiranagar,
Bangalore - 560008
Karnataka
Ph: +91-80-41698941/42
www.arghyam.org
www.indiawaterportal.org

PARTNER ORGANISATIONS:

GRAMYASHEEL, Supal
KOSI SEVA SADAN, Saharsa
SAMTA, Khagaria
GHOGHARDIHA PRAKHAND SWARAJYA
VIKAS SANGH, Madhubani
WATER ACTION, West Champaran