

# Safe Water and Sanitation: People's Initiatives for Sustainable Solutions

By: Mahiti – a rural development center, Dholera, Gujarat

## Introduction



**Mahiti** – a rural development center is a grass roots development organization located at Dholera Village in Dhandhuka Taluka of Ahmadabad district in Gujarat. The meaning of “Mahiti” is “information” in Gujarati Language. And initially it was started as project activities of Ahmadabad based NGOs called “Utthan” to create awareness through dissemination of information on drinking water in year 1981. In the project implementation process Information (Mahiti Kendra) Center was set up by Utthan to conduct research, disseminate findings and recommendations while capacity building of the

local leader for advocacy and effectively implementation of various project related to drinking water. Utthan has been realized after 13 years of work with local communities in this region that local people are able to lead the initiative with its own formal structure of organization. And Mahiti as an organization came in to existence in the year of **1994** and “**Mahiti**” got registered under Bombay Public Charitable Trust Act 1950 and Gujarat Societies Act 1860 in this very year and Mrs. Devuben Pandya was selected and elected in this process to lead the organizational process and “Utthan” handed over the work of development in this area to Mahiti and stepped out from this area.

Geographically, working area (region) of Mahiti is called “Bhal”. The meaning of Bhal is forehead. And there is reason to call it “Bhal”. Metaphor used like this there are different parts of body. And each of part of body has its own characteristic. Like “forehead” is at top of the body and there is scarcity of Harmon to grow hair at the forehead. Similarly, Bhal region is also described as area of hopeless area for development and restoration of natural resources. Because of, it has saline coastal land without underground fresh water and fertile land. And this region of Gujarat is extremely backward in context of development indicators such as education, health, social infrastructure etc. and lack of live natural resources like drinking water, fertile land, forest etc. for survival of poor people.

Historically, economically and socially, Dholera was an erstwhile business town and port but today, it is mere a “Kasba” of few rich and money lenders but most of people in the region are from the marginalized communities such as Schedule Castes (SCs) and Other Backward Castes (OBCs) and Muslim minorities. There are few other communities but most of them are also poor and resources less.

Most of people the region have been facing problems related to water, food, education, health, and employment. Most of vulnerable are women, children and youth due to lack awareness about their constitutional rights and entitlement. Even government outreach is very poor and government has failed to deliver it duties in context of proving services / benefits available for them being citizen of Gujarat and India respectively.

Politically, people are unorganized on issues related to the region but they are divided on the basis of caste / religion / groups / parties. That is why; political class of the region is also marginalized in mainstream politics of Gujarat. Therefore, they are unable to put their demand before the Government of Gujarat effectively and efficiently.

Recent development in the region is that Government of Gujarat has declared this region as “Special Investment Region (SIR)”, Special Economic Zone (SEZ) and Business Development Zone, after declaration to build world class city, the case of fraudulent and land grabbing of poor farmers have been on increased.....Therefore, there is fear of prevailed human rights violence.

Mahiti has been working with women, children and youth to ensure the rights, justice and entitlement and provide livelihood and other services to the needy community and individuals through it strategic planning, available resources and donors support.

### **The Bhal Region – The Problem**

Most of Bhal region has alkaline saline soil with large cracks. Earthquake, floods due to excessive rains, tidal waves at sea coast and drought is common natural disasters here, seawater ingress has damaged the soil in coastal areas. Soil being saline and hard is virtually unproductive and cannot even take rainwater. When it rains the water gets logged and never goes down in the soil making routine movement difficult for people. Small rivers like Sabarmati, Bhogavo, Sukhbhadar, Ghelo and Kalubhar flow through this region and merges with the Gult of Cambay. Average rain is 400 – 600 mili meters but most of the water flows into the sea. Owing to these adverse geographical and climate conditions livelihood systems here are very poor.

Vegetation is scare; only Propolis Juliflora and Salvadoara persica grow here. About six decade back the sea coast here was covered with mangroves and vegetation like Salvadora and forage grow here is abundance but the camel owners from Kutch graze their cattle here and coastal vegetation growth got imbalanced. At present it is scare.

There have been a number of geographical climate changes in this region. Tidal waves have increased and so have sea water ingress and water logging. The rivers change their course quite often. Large creeks have developed near the sea coast and have reached up to cultivable land.

Mahiti has been working to address these issues through natural resource management and development activities. These efforts include soil conservation, soil improvement, drinking water resource management activities by organizing people’s group and their insight and participation.

### **The Challenge**

Two diametrically opposite approaches are seen at work in the western Indian state of Gujarat for providing sustainable solution to the ever-increasing shortage of drinking water. One approach touts the multi-billion-rupee dam on the Narmada River as the panacea. It suggests construction of canals and lying of pipelines as the surefire way to quench the thirst of a parched hinterland. The emphasis in this approach is on capital-intensive technology, centralized planning and control, and commercialization of water to trigger off an agricultural and industrial revolution. The government plans to spend over Rs 200,000 million to supply drinking water to over 12,000 villages through pipeline from the Narmada River.

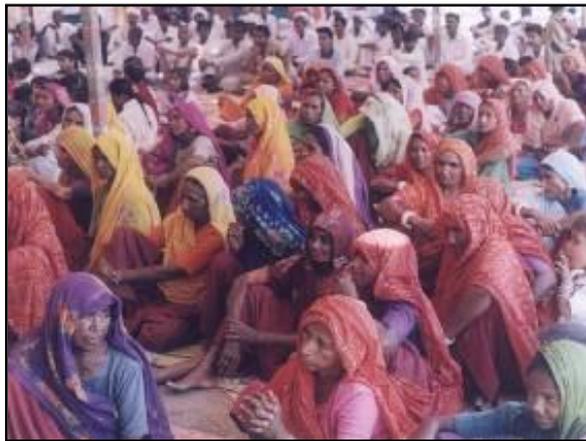
The other approach favors finding local solutions by the local people. The emphasis in this approach is on tapping the rainwater where it falls, harvesting of surface water, recharging of groundwater resources, conservation and economical use of water, its equitable distribution and the management and control of community water resources by the community.

We, at Mahiti, an independent non-government agency, have been the protagonists of this second approach. This case study / paper set out the urgency of community-based, people-centered policy action and the experience that informs our commitment. Today there is a wider acceptance of this approach not just among other non-government agencies that are active in tackling the issue of

drinking water but also in the policy documents of state and central governments. Yet the actual ground realities indicate how difficult it can be to move from rhetoric to practice.

We are happy to note that the global community has accepted genuine participation of individuals and households in decision-making as the key to achieving water and sanitation goals. There is appreciation that community participation in plans and programs must entail genuine empowerment to find *local* solutions in which equity is the key and access, a human right. This has been the consensus of Vision 21, the World Water Report 2002, the Bonn Recommendations as well as the WEHAB core-sector approach that emerged at Johannesburg. The consensus achieved with such great effort at the global level now demands even greater task of translation at the grass-roots.

### Initiating a People's Movement



It has been over two decades since Mahiti began its interventions in the highly saline and barren Bhal region of Ahmedabad & Bhavnagar district of Gujarat. In Bhal, as in so many parts of India, feudal practices had left women with little power to direct their own lives or to contribute effectively to community well-being. Violent conflicts over scarce drinking water were a daily affair, inhibiting collective action. It was here that Mahiti decided to organize women around issues of everyday livelihood and survival. The government had an ambitious plan to supply drinking water to this region through pipeline

and tankers, a scheme that was non-sustainable and that would have led to accentuation of conflicts between vested-interest groups and the underprivileged. As it is, a power group of men belonging to a headstrong community dominated socio-political institutions in the region. And, if the water was to be brought to the area through pipeline and tankers, the same very powerful group would have had absolute control over the scarce water resources.



Mahiti started community organization efforts among the women and other underprivileged sections of the community in the region. A powerful women's movement emerged, leading to the creation of an institution widely respected today for its achievements: Mahiti. Women compelled the government to support development of drinking water resources locally through rainwater harvesting techniques. Women also ensured equity in the distribution of water.

Most local problems were related to water scarcity. Thus the move toward self-reliance led in time to the mastery over rainwater harvesting systems, the construction of rainwater harvesting plastic lined pond that could harvest precious rainwater while also the aquifer, household and environmental sanitation, and employment opportunities through local water systems, as well as the agricultural opportunities which they stimulated.

Today the movement has extended into Gujarat's urban areas, where the rapid pace of urbanization encounters critical conditions of scarcity, squalor and deprivation of every kind. An important

demonstration of urban rainwater harvesting systems is now underway in Ahmedabad, with the collaboration of a range of scientific, technical and administrative agencies.

Mahiti is also a member of Pravah – a state level network toward safe water and sanitation for all. It is active in regional and national level that is working to ensure access to these services as a basic human right. None of this has been easy. The barriers to change have been formidable, and remain so: age-old customs of male dominance, established power systems, insensitive bureaucracies, political and social violence through the exploitation of prejudices have all to be encountered and overcome.

Mahiti's greatest resource today is its community of women and men who have learned through their own experience that change is possible through the strength of collective effort and trust, and that it is possible to achieve from within without undue dependence on others.

Our community mobilization efforts have begun to show results in terms of alternative natural resource management systems that have been put in place in over 100 villages where we have been working. All our efforts have been scalable.

### The Process



Against this backdrop, access to safe drinking water for all on a sustainable basis (at the closest available distance) has been the prime objective of Mahiti in all the two districts where it has been working since 1994. Mahiti believes that access at the closest available location can be achieved in a sustainable way by harnessing water where it falls, and by bestowing ownership of common water resources to the community. Mahiti's conviction in decentralized water resource management systems stems from an experience in the 1990s in the highly saline Bhal region of Ahmedabad district. It was

here that water committees formed by the women of Bhal began managing their village's common water resources, first through protection of ponds and then through reviving and adopting various techniques of rainwater harvesting. The enormous success which this women's movement has achieved is evidenced by their achievement in 2002 (a year of drought) in storing sufficient water to ensure basic household needs for over two years. Check-dam, percolation tanks, farm ponds, waste-weirs, hand-pump recharge and roof top rainwater harvesting are all elements in Mahiti's comprehensive approach. In each of the villages, the location of water resources to be developed is selected in consultation with geologists and members of the village water committee.

Since all the activities related to water resources development are implemented by village water committees (in which women have more than one-third representation), Mahiti's role is only that of a facilitator. Mahiti has organized training workshops, exposure visits, and awareness drives to benefit members of the water committees. These capacity building efforts have enabled women and other members of water committees to understand technical, financial, and logistical and aspects of water resource management.

Because the people of these villages are involved in planning, executing and managing the community's water resources as also making financial contribution to the project, a strong feeling of ownership has developed among them.

## **Mahiti's Interventions**

Mahiti's intervention has been mainly with a vision of creating sustainable processes of village empowerment. Mahiti thus initiates these processes through organizing the underprivileged communities in the rural areas of Gujarat, especially women, around their own major issues and through institutions that can help build their capacities. Our emphasis has always been on helping village-level institutions and community-based organizations to find local solutions to their basic livelihood issues, based on informed choices and on equity and sustainability. This is in sharp contrast to the centralized planning approach in which experts, technocrats, bureaucrats and political leaders plan and work out solutions, most often without involving local communities except in a token manner.

Over two decades of community mobilization efforts by Mahiti has unleashed a mass movement in the coastal regions of Gujarat where women have begun to challenge the prevailing feudal, brutal and exploitative social system. This movement is seeking to establish a democratic, humane and just society by putting in place an alternative development model that is sustainable, eco-friendly and equitable.

Having formed village level institutions and community based organizations in over 100 villages of two districts (Bhavnagar & Ahmedabad); Mahiti is now in the process of reaching out to more villages while consolidating its community mobilization efforts by forming area level federations.

Through networks of women's associations and non-government organizations working in the field of natural resources management, health, sanitation, women's empowerment and legal aid, Mahiti is seeking to influence the policies of the state government to facilitate decentralization of power.

Already at the village-level, vigilant squads of women have begun to challenge the nexus among the various vested-interest groups to ensure justice for the poor and the underprivileged.

The newly empowered women members of Panchayati Raj (local self-government) Institutions have begun to assert themselves breaking free from the patriarchal shackles of the men who have been calling the shots in the family, in the community and in the administration. Through Mahiti's intervention in the field of natural resource management, basic livelihood issues, health and sanitation, people in over 100 villages have begun their journey toward self-reliance.

## **The Impact**

We know that a satisfactory water supply must be available to all humans. By 'satisfactory' we mean water must be available in adequate quantity, be safe to drink and be accessible. Improving access to safe drinking water can result in tangible benefits to health so every effort should be made to achieve drinking water quality that is as safe as is practicably possible. Scarcity of drinking water is a long-time problem in the Bhal region of Ahmedabad and Bhavnagar district of Gujarat. This region is characterized by hot summers and erratic rainfall. Being a coastal region, salinity ingress into groundwater is high. There is no underground sweet water in the region. Wells in the region have either dried up or turned saline due to depleting water tables. Every year, drinking water had to be supplied by tankers for a couple of months. The region suffers from a hostile geo-climatic environment, salinity ingress, erratic rains, natural salt deposition on soil surface especially in summers, low agriculture productivity, almost no vegetation, wild growth of *Prosopis Juliflora* and *Salvadora Persica* in common land, wind erosion, water logging due to black soils, recurrent droughts, flood etc. Even though the average rainfall in the region is 400-500 mms, it still results in inundation due to its topography. The state government has adopted a two pronged strategy to reach water supply to villages in the state: (1) Transfer of Narmada River Water to problem villages / regions through regional water supply schemes or in some cases through tankers and (2) Harvesting

surface rainwater in to the pond or tanks to promote local water resources. To ensure sustainability of local drinking water resources, water conservation activities were planned in the region by GoG. The program was an important landmark for promotion of community management water supply and sanitation in the state. Though the project was originally designed as a typical Regional Water Supply Scheme in Bhavnagar district, it was realized that (1) it was necessary to involve local communities in water supply management and (2) it was also necessary to explore augmenting local water.

Looking at severe water crisis in the Bhal region, Mahiti has been working to improve access to drinking water for human being and cattle with support from Government of Gujarat, Government of India and other donors.

Mahiti has initiated with construction of **Rainwater Harvesting Plastic Lined Ponds** to conserve water for drinking purpose. Later, Mahiti has focused on construction of **Roof-Top Rainwater Harvesting Structures - Tanks (RRWHS)** for individual families. Till date, Mahiti has been able to construct **21 Rainwater Harvesting Plastic Lined Ponds and more than 2000 Roof-Top Rainwater Harvesting Structures** (tanks), more than **50 water resource management structures** etc. It has purchased in bulk in-village water supply system such laying of pipeline, water distribution system pump rooms, pumping machinery etc.

Under the “Coastal Area Development Program’ being partnered with Coastal Salinity Prevention Cell (CSPC) and Water and Sanitation Management Organization (WASMO), Gandhinagar, complete water distribution infrastructure schemes have been operationalized in 45 coastal villages of Dhandhuka block with establishment of strong village water and sanitation committees. The same initiative of ensuring Drinking Water Security and Improved Sanitation Practices is being implemented in another 15 coastal villages of Talaja taluka of Bhavnagar district. Mahiti also have addressed the problem of water quality. With the financial support from Conrad N. Hilton Foundation through Coastal Salinity Prevention Cell (CSPC), Mahiti has developed a Water Testing Laboratory which is being executed by a lab technician. Till date total more than 600 water samples have been tested in the laboratory. The reports of the water samples have been shared with the village water & sanitation committee and informed them about the water quality.



As many as **75 % of the total 100 villages** in two districts have become self-reliant as far as drinking water is concerned because of the alternative systems of water resources developed by them. Earlier, women of these villages had to walk long distances to fetch drinking water and during the scarcity period, the government had to supply water through tankers from far off places. **Mahiti has successfully constructed 21 Rainwater Harvesting Plastic Lined Ponds in 20 villages of Bhal region. Moreover, more than 2000 Roof-Top Rainwater Harvesting Structures (Tanks) – RRWHS have been constructed successfully since last two decades. These works have been carried out through effective participation of Water Committees specially women leaders in Bhal region.**

The most visible impact of Mahiti's intervention has been on the health of women and children. There has been a substantial increase in the income of families living below the poverty line as women are able to engage themselves in farm and non-farm activities, now that they have been freed from the burden of fetching drinking water, fodder and fuel. There has been a marked decline in the migration of people from both the coastal and tribal regions of Gujarat as the people are able to find gainful employment in their own or nearby villages following introduction of additional cropping season.

### Health & Sanitation

None of the villages covered by Mahiti have any primary health care facilities. Visits by government health workers are also limited. Water scarcity affects personal hygiene as well as the availability of food and nutrition needs. Gender discrimination in health care, including nutrition, cut across caste and class differences as women's health needs have the lowest priority. In most cases, tradition demands that they eat after men and children. As a result, many women suffer from anemia and bear underweight children. Reliance on local witchdoctors is not uncommon and women are



often the victims of wrong diagnosis. Mahiti initiated work in basic healthcare, hygiene awareness and sanitation, training local health workers, linking them to the PHCs and conducting awareness camps in schools and community centers. The most visible impact of Mahiti's intervention has been on the health of women and children, general cleanliness of villages, and a substantial increase in income through farm and non-farm activities, now that women were freed from the backbreaking and time-consuming task of fetching drinking water, firewood and fodder.

Water scarcity and the increasing use of hybrid seeds, chemical fertilizers and pesticides have had an adverse impact on the environment and the quality of life, particularly for women. Mahiti's programs on health and sanitation have had positive impact on personal hygiene - people are using a ladle to draw water out from pots (protecting water from contamination), children comb their hair and cut nails regularly. In the villages where garbage used to be dumped near water sources, people are trying to find alternative spaces for waste disposal, Soak pits outside the houses have made many streets look cleaner. Inclusion of bathing places for women has resulted in better hygienic and health conditions.

Prior to Mahiti's interventions, the health situation in these remote villages was very poor. Infant mortality as well as dependence on local witch doctors was high. Women's health needs were given little priority and they often had miscarriages due to difficulty of access to far-off hospitals. Common ailments like skin allergies, colds and coughs prevailed because of unhygienic conditions.

With the training of health workers and basic health awareness the situation is slowly changing. Mahiti has facilitated various healthcare activities like health awareness programs, cleanliness campaigns thrice a year, superstition eradication programs. Street plays are used to propagate health messages. Health workers from villages have been trained to carry out basic healthcare activities. Midwives have also been trained. All this has cumulatively improved the healthcare situation in the project villages.

There has been a marked decline in the migration of people from villages in Bhal region of Gujarat where Mahiti has been working as the people are able to find gainful employment in their own or

nearby villages following introduction of additional cropping season. Earlier, in the absence of adequate water resources, people could grow crops only during the monsoon.

### **Lessons from the Field**

**Encourage local communities toward local solutions.** What is possible through a genuine paradigm shift has been strongly demonstrated over three years of drought by women and men in several districts of Gujarat. For example, in fluoride-affected **Dantrad village** of Bhavnagar district, women and Water Committees members have led a rainwater harvesting effort (Check Dam to strengthen existing bore-well for drinking water purpose) that is capable of recharging and storing water up to a capacity of 100 million liters per year. So successful has this effort been that irrespective of what happens in the monsoon this year, there is adequate provision of community-managed fluoride-free water for essential domestic needs over the next two years. Community-led resource mobilization covered 10 per cent of the total cost of Rs 3.00 lakhs. In addition, the community has innovated arrangements to regulate the proper use of this resource. This has been achieved in the face of considerable pressure from vested interests to gain control for commercial uses.

**Give priority to hygiene awareness and sanitation.** This overwhelming need can never be achieved unless it is linked to local water-resource conservation, development and management, and to the development of a local, gender-sensitive and women-led movement. Hygiene and sanitation behaviors cannot be imposed from the top, as 50 years of experience indicates. And without hygiene awareness and sanitation practice, no amount of so-called safe water can remain safe!

**The urban crisis demands new capacities and approaches.** Experience during the years since The Hague has also underlined the need for many of us with predominantly rural experience to pay increasing attention to the urban challenge. The global concern with the impact of population growth and urbanization on poor communities in towns and cities is reflected in the efforts of India's urban authorities and many NGOs to innovate community-based strategies which can apply to the management, financial and technological demands of urban WATSAN. A key example is the introduction of new legislation in several Indian cities that makes rainwater harvesting compulsory for new construction. Some authorities realize that this cannot be implemented without strong community understanding and involvement in decisions and resource management. Others remain unaware, and need to be awakened.

### **Lessons Learnt**

1. Local wisdom and knowledge cannot be bypassed nor discarded if we want a sustainable livelihood solution.
2. No WATSAN program could be sustainable without the active participation of vulnerable communities specially women at all level.
3. Innovativeness, based on traditional wisdom and knowledge, faces extreme resistance from the state mainly because traditional practices are considered to be qualitatively inferior. Demonstration proves otherwise. Therefore, control over resources and major decision-making processes must reflect the needs of the communities.
4. Traditional knowledge was based on building / augmenting / replenishing the natural resources as well as ensuring its use according to the livelihood priorities and on a value system that would be shared and used judiciously. Compared to that, the modern systems have treated resources as a commodity.
5. Decentralized people centered drinking water and sanitation systems offer greater potential for improvement and development as also provide better opportunities for equitable distribution of resources since local communities' play an active role at all stages of its management and utilization.

6. Scientific inputs are essential to improving traditional systems and sources, rather than to discarding them and trying out experiments far from the reach of the communities.
7. If women are given appropriate opportunities and enough room to bring out their strength, they exhibit tremendous power against various vested-interest groups. Their greatest weapons are initiative in taking action, perseverance and hope on one hand and the strength to resolve conflicts as well as take on direct confrontation if the need arises on the other.
8. Women's involvement changes the texture of the process of development by bringing out the needs of all groups in the community.
9. It is essential not only to change the schemes and programs but also the institutional structures and roles of the authorities that control these.
10. Livelihood priorities such as drinking water, food, fuel, fodder, health services etc. can be managed on a sustainable basis if their overall management is decentralized.