Gender and Participation in Low-cost Irrigation Schemes

A case of AKRSP(India)'s Interventions in Tribal Gujarat

Jyotirmayee Acharya
PROGRAMME AREAS OF AKRSP (INDIA)

Bharuch, Surat and Narmada districts are some of the poorest areas in the state of Gujarat. A very poor tribal community live on undulating and degraded land that was once heavily forested.

Junagadh district on coastal Kathiawar Peninsula faces a problem of salinity due to overexploitation of groundwater. Natural resource are either degraded (like the dry Meghal River) or out of bounds for the tribals and other disadvantaged people (such as around the Gir Protected Area).

Surendranagar district is one of the most drought-prone districts of Gujarat. Most villages in this district face an acute shortage of water.

In MP, AKRSP(I) has begun work in Khandwa and Burhanpur districts which are home to marginalized tribal populations who live in poverty despite the rich natural resources base.

Kutch district is extremely drought prone, AKRSP (India) provides training to organisations coping with drought in the district. It works in collaboration with other AKDN agencies to drought proof several villages.
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This paper by Dr. Jyotirmayee Acharya documents the work done by women groups in managing group well irrigation schemes in the tribal districts of Bharuch, Narmada and Surat of South Gujarat.

Tribal farmers has low land holding and though rainfall is about 800-900 mm per year, it is erratic. Since the terrain is hilly, surface irrigation schemes do not provide much irrigation. Individual well are not viable because of the high cost, low land holding and the geology. Hence group wells (6-7 farmers assessing irrigation water from a large well) has emerged as a good option in this homogenous communities.

However, who are largely excluded from irrigation activities, have shown initiative in managing these wells when given an opportunity. This paper tells the story of the work they have done and its implications on their self-esteem, economic and personal position in the village.

We hope you find it useful reading. Please send your comments to Jyoti@akrspi.org

Apoorva Oza
Chief Executive Officer
AKRSP (India)
ACKNOWLEDGEMENTS

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Jyotirmayeee Acharya
DA Research and Monitoring
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Introduction

In the new millennium, the importance of water as a gendered resource has emerged as never before. There has been rapid expansion in international and national initiative, civil society and government services, including the establishment of Gender and Water Alliance, World Water Forum and International Water Management Institute. This reflects a growing recognition that managing water as much as land and biomass is going to be a critical challenge for future economic growth and agricultural sustainability. The debate in the field of small irrigation services relevant to this paper is that enhancement of livelihood is about economic, social, cultural and political growth. This in turn promotes men’s as well as women’s well-being and agencies. A judicious use of land and water resources is crucial for agricultural growth. The World Bank defines Participatory Irrigation Management (PIM) as “the involvement of irrigation users in all aspects of irrigation management, and at all levels”. This implies that water users participate in planning, design, construction, operation and maintenance. Also, these aspects include their participation in financing, deciding on rules and norms, monitoring and evaluation of irrigation systems.

From the livelihood enhancement perspective, the irrigation management programme is an effective and equitable instrument for productivity enhancement (Shah 1993, Zwarteveen 1997, Oza 2006) as farmers have a sound role in collectively deciding the aspects of their livelihoods. Another goal of this Participatory Irrigation Management programme would be providing and enabling institutional environment to tap both women’s and men’s productive potentials in an equitable manner.

Working from a sustainable livelihoods perspective, NGOs have been largely kept out of PIM when sponsored by the State Irrigation department. Major problems in irrigation sector in the state are: Inadequate allocation for Operation and Maintenance (O&M), inequitable distribution of water, lack of incentives for saving water and low recovery of water rates. The problem is compounded by lack of any effective institutional check on the management. The ability of the local communities and governments to deal with water management is constrained by the absence of reliable data and tools, information networks and the professional and institutional capacities. Study by R. Parthasarathy, and Apoorva Oza (2006) on PIM in Gujarat and elsewhere observed that the farmers with small size of landholdings have derived highest benefit in crop productivity through the PIM association. The present government’s emphasis on irrigation is in the right direction. Institutional reform issues are important, particularly in inputs, marketing, and land and water management. These are more important than price and trade policy reforms. However, policy-making has hardly designed and implemented the gender equity considerations and the recognition that non-exploitative gender production relations foster agricultural growth. This study shows that NGOs in Gujarat concerns benefit for the deprived and marginalized of the backward areas such as tribal women and tailenders have contributed to the debate over agricultural growth and gender equity. Studies on small scale irrigated agriculture have confirmed that the productivity of women farm decision-makers is equally efficient and have a greater impact on family well-being to that of men (Koopen et al. 2001, Zwarteveen 1997).

The Aga Khan Rural Support Programme India [AKRSP(India)] has been promoting PIM for more than fifteen years in the tribal areas of Bharuch, Surat and Narmada districts, in South Gujarat. This programme aims at stimulating the PIM schemes by grassroots institution building into
Water User Associations (WUA) for water management and providing agricultural training, inputs, and market provision and redesign and rehabilitation of infrastructure. The role in facilitating the capacity building of the WUA including land holding operations till the WUAs acquire competence to become self-managers in these districts of South Gujarat can not be ignored. Out of the 770 villages at present, AKRSP(India) works with 366 tribal villages of these three districts. AKRSP(India) is concerned not only with aggregate levels of production or employment, but also poverty alleviation and equity in terms of the distribution of income and benefits. This paper concerns gender-balanced mode of irrigation scheme practices in which both women and men have, and can take, equal opportunities to manage their agricultural productivity.

Next section discusses the geographical condition of the study areas in which AKRSP(India) facilitates small irrigation services through Water User Association/groups for enhancing the multiple livelihood possibilities.

**Overview of the Study Area**

Scarcity of surface water coupled with poor management of resources by tribal poor of Bharuch, Surat and Narmada districts in the semi-arid region in South Gujarat imposes a serious threat to agricultural production and off-farm economic activities. The main tribal population living here are the Vasavas and Chaudharis (see Map 1).

Previously used to hill slope cultivation and forest based livelihoods, they have shifted to subsistence agriculture and pockets of commercial farming since last four generations. The Narmada Canal Project Network and local canal irrigation system allows for good production from the fertile soil. However, agricultural productivity remains largely rain-fed owing partly to inclining and undulating land with run-off of top soil and bad canal management practices and partly to effective management of land and water harvesting techniques, lack of financial services, agricultural inputs and market.

Marginalised communities, such as landless tribal and those who lack year round livelihood options from agriculture and allied activities often accept entrenched poverty, deprivation and exclusion as a way of life. While factories in Surat and farm-yard are drawing the maximum attention for male wage worker or contractual labours, women bear a major role in the household economy and agricultural production activities. Today, agriculture is the major livelihood option, having expanded into forest areas and in some places barren forest land has been converted into fodder land. Given the nature of monsoon rainfall in India, the key to meeting the country’s growing demand for water for domestic and agricultural use is to more effectively harness rainfall which is the ultimate source of all freshwater resources.
Small Irrigation Scheme and Tribal Water User Association

While irrigation from canal that taps the reservoirs formed by large dams is an option, there are other alternatives to canal irrigation like the tube/bore well that tap the ground water drilled by the new machines, for the large commercial farmers and cash crop growers of South Gujarat. For example, it has been observed in the field that Sathvav canal had dried up since the Month of April 2007 the Group Well (GW) around effectively supplementing water for the land under cash crop (sugarcane and vegetable) in this area. However, extensive use of this sort for sugarcane farming in this region for the marginal and small farmers is a relatively recent phenomenon. In fact, the concept of a user group formed around a well was introduced by AKRSP(India) specifically to cater to the needs of these marginal and small farmers (Agarwal et al. 1998, Koopen et al. 2001, Oza 2006).

Given the performances of AKRSP(India) on integrating the interest of the small and marginal landholder into large and small scale PIMs in the command areas, Tribal Sub Plant of Government of Gujarat supported small water irrigation scheme such as Group Well since 2001. Setting up a GW becomes cheaper and innovative when investment became participatory. The tribal small land holders who lack access to water for irrigation canal contribute labour, cash and commitment for management of water for agricultural productivity, livestock keeping and survival. Table 1 (see annexure 1) provides an overview of the GW managed by women from 2002-2006 (as shown in bold) which were sponsored by Tribal Sub Plant Scheme through AKRSP(India) for Mandvi Cluster. In the year 2006, Japanese Fund for Poverty Alleviation and Government of Gujarat sponsored to set up 30 integrated GW package for 300 users divided among 30 villages. It helped expand AKRSP(India)’s operations in a large scale. The expected outcome is to reduce the migration and increase the income from Rs. 3000 to Rs. 18000 per year for Below Poverty Line (BPL) level 300 people. The post-development era perception about water management and agricultural productivity is thus characterised not so much by a ‘retreat of the state’, as by radical restructuring of relations between the discursive and institutional regimes of the state and civil society. An innovative component of this enabling environment is the best utilization of the subsidy policy for the support of small-scale agricultural water use of the TSP and ADB, especially by women members. Regarding governance, such a PIM process represented a partnership between government, NGOs and water users. It creates the environment for collective action and dialogue between users, agencies and governments. This, in turn, leads to better opportunities for equity, better management and improved collection of water charges. Moreover, irrigation management through active participation of farmers helps ensure the sustainability of irrigation system. However, the main question addressed in this study does the irrigation system bring any change in the trend of women’s participation in agricultural practices at all? Does the current mode of women’s participation in the irrigation management (increasingly engage in implementation and supervision, collective action and decision-making) have brought change in their lives?

In the next section, I describe the experience and perception of female group members managing group-well and their perspectives often narrated orally, to shed light on new challenges to what overtake as “farm women”. Before this, a general understanding on the extent to which access to ground water services address women practical daily needs (economic impact) as well as create an enabling environment to reflect their
strategic (social change) gender interests is dis-
cussed in the next section.

An understanding of the integration of the marginalised tribal community people and especially women into the ground water management can deepen our understanding of gender participation in agrarian productivity in many parts of semi-arid region. First, ground water used and managed is a useful lens through which one can examine long-standing debates over the dynamism of gender and agricultural practices in India. The labour and capital embodied in agricultural landscape include not only building and cultivating physical structure – group-well, check-dams and crops – but also the work of creating, sustaining and altering relations between women and men, structural conditions and places. This investment in the discursive and symbolic practices of imagining landscapes, through narratives and cases, may seem subtle but it yields real effects (Mohanty 1991, Acharya and Lund 2002).

Second, investment in the ground water extraction is one such potent agricultural productivity enhancing opportunity. Ground water enables multiple cropping, productions of new crops, and the use of fertilizer to boost yields. However, access to ground water is often tied to access to credit. By involving SHGs and WUAs and watershed development holds a great promise for tribal peoples and mitigating the severity of migration in this region. The trajectory of ground water management by women provides insights into the two dominant factors governing gender equity in agrarian change: social and spatial relationship of gender and new forms of livelihood possibilities.

Third, struggle to maintain access to source of ground water not only requires group effort but it has also risen to new forms of social organiza-
tion. These schemes involve collaborations between NGOs, villagers, and state agencies, yoking communitarian identities and sentiments together with the cause of resource conservation and green revolution such as water user and maintenance association, Pani Panchayat, Participatory Irrigation Management association and so on. Those new form of community organization shape and reshape the struggle to maintain access to it and our understanding of economic and social change in agrarian tribal society. Beyond the celebratory hype, these processes articulate change in the economic policy on the one hand, and inculcate the ethos of political decentralization in local panchayat. The role of new form of women’s groups and association in the creation of a new sphere that transacts temporal and spatial scales, demands a closer scrutiny (Agarwal and Sivaramakrishna 2001, Agarwal 2003).

Study by Tushaar Shah (1993) pointed out that the market in groundwater in Gujarat is highly competitive, efficient and individualized, bearing all the marks of what economists define as “economic rationality”. The politics of water scarcity and price fixing in the community cut across the issues of caste, class, gender, leadership and so on (Dubash 2002, Hardiman 1998). Fourth, cultural politics of water offers the analytical framework within which we examine questions of power and inequality, conflicts and compromises, as they shape the waterscape and agricultural productivities. While AKRSP(India) facilitated the male and female group-well users to manage water to enhance agricultural productivity, older patron-client relationships between the dominant and subordinate still exist as the latter still depended heavily on the former for employment as labourers or as sharecroppers on the more productive irrigated land. This paper attempts to charts this ground, narrating new
forms of engagement that blur the boundaries between gender, water and agricultural productivity.

**Case Studies**

This study draws cases from three Mahila Vikas Mandals located in Badtal, Sathvav and Bhatkahi villages under Mahila Jagruti Manch, Mandvi, AKRSP(India) managing low-cost irrigation (group-well) schemes. Table 1 gives an overview of the women’s participation in the water harvesting projects in Mandvi Cluster.

Experience of women is imperative at this juncture to understand the ways in which links between sites of memories come into play with these epistemic structures. Under such conditions, I have analyzed research participants’ perceptions and inquire into the constraints and possibilities in irrigation and technology management. The data collection for this paper started during my visit to the Netrang SHT in November 2006-February 2007 at various times. Individual interview and group conversations were conducted with the SHG members of Mandavi and Sagbara women’s federations at different localities: federation office, home veranda, group-well site at agriculture field. Members are farmers, agricultural labourers and home-workers. Group conversations were chronologically free-flowing and open-ended, and linger over details of the periods spent in study areas.

The case study explores how gender-equitable low-cost irrigation processes not only shape the distribution of production factors and production relations per se male’s control over cheap female family labour, but also reshape women’s and men’s motivation to invest their efforts. As shown in Table 2, 10 GW out of 53 group-well in the Mandvi cluster (see Table 3 annexure 1) are managed by the 83 female members till 2007.

**Table 1 Overview of the women’s participation in the water harvesting projects in Mandvi Cluster**

<table>
<thead>
<tr>
<th>Type of Project</th>
<th>Total No of Project</th>
<th>Managing by Women(MVM)</th>
<th>Major performances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lift Irrigation</td>
<td>1</td>
<td></td>
<td>Women join as a nominal member. Gradually they had been taken various responsibilities like implementation part as a EV and Cost. Committee member</td>
</tr>
<tr>
<td>Pump Irrigation</td>
<td>11</td>
<td>1</td>
<td>Women manage diesel pump for pumping the well water</td>
</tr>
<tr>
<td>Group Well scheme</td>
<td>41</td>
<td>13</td>
<td>The MVM has been actively participating in all phases of project activities, especially for planning, implementation and asset management.</td>
</tr>
<tr>
<td>Check Dam</td>
<td>5</td>
<td>1</td>
<td>Asset managed by women members</td>
</tr>
<tr>
<td>Group Well work ongoing</td>
<td>2</td>
<td></td>
<td>In this two project, the good women involvement model set up by MVM</td>
</tr>
<tr>
<td>Canal Irrigation</td>
<td>3</td>
<td></td>
<td>Presently the 50% membership of women in Kevdi Project. Similarly three women chosen in committee of CIs Issar</td>
</tr>
</tbody>
</table>


---

1 According to Bedford & Burgees (2001: 123) [Focus] groups place the individuals in a group context, where conversations can develop and flourish in what could be considered more common place, social situations, people’s opinions and believes and pertinent issues can be questioned and/or amplified by others in the group.
Table 2. Group well irrigation water user in the Mandvi cluster

<table>
<thead>
<tr>
<th>Name of the village</th>
<th>No. of GW</th>
<th>No. of women member</th>
<th>Area under cultivation in acre</th>
<th>Year of start</th>
</tr>
</thead>
<tbody>
<tr>
<td>Badtal</td>
<td>1</td>
<td>7</td>
<td>20</td>
<td>2003-04</td>
</tr>
<tr>
<td>Sathvav</td>
<td>1</td>
<td>8</td>
<td>15</td>
<td>2005-06</td>
</tr>
<tr>
<td>Bhatkhai</td>
<td>2</td>
<td>13</td>
<td>16</td>
<td>2003-06</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6</td>
<td>12</td>
<td>2006-07</td>
</tr>
<tr>
<td>Devgiri</td>
<td>2</td>
<td>12</td>
<td>14</td>
<td>2002-03</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7</td>
<td>16</td>
<td>2003-04</td>
</tr>
<tr>
<td>Bedada</td>
<td>2</td>
<td>6</td>
<td>20</td>
<td>2002-03</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8</td>
<td>18</td>
<td>2003-04</td>
</tr>
<tr>
<td>Ghantoli</td>
<td>1</td>
<td>6</td>
<td>14</td>
<td>2006-07</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
<td><strong>80</strong></td>
<td><strong>145</strong></td>
<td><strong>2003-07</strong></td>
</tr>
</tbody>
</table>


This study argues that mainstream gender concern in low-cost irrigation project – such as agricultural productivity, sustainable operation, and maintenance of infrastructure and effective women’s participation are prerequisite for a gender-balanced mode of agricultural productive. This study emphasizes that a pattern of gender balance agricultural growth can not afford to ignore such an egalitarian mode of production practice within which tribal women in Gujarat are farmers in their own right and exercising their full human potential to contribute to their household food security and negotiating their identity (ies). Agricultural policy-makers and intervention agencies, including irrigation agencies and practitioners that seek to promote agricultural growth would foster women’s access to and control over such factors both in the household and institutions.

Badtal

My conversation with Kamuben, one of the para-worker and a well known leader of Jagruti Mahila Manch, Mandvi took place on a February afternoon in 2007. Kamuben aged about 55-years, dropped out of the 9th level of schooling. Well known for her activism she works as a member of the Arogya Samiti, (health committee) as a member of the Social Security Committee she deals with the widow issues. She has coordinated several padyatra (foot march) and mass movement² for awareness on “sustainable agriculture” and gender sensitization for the Mandavi Women’s Federation. She lives with daughter and son in Godan fadia (hamlet) of Badtal village. Kamuben represent the post-structural socio-economic reform generation of women for whom commercial farming and social activism offer realistic opportunity as a form of occupation and affirmation. Kamuben told to me her story how widowhood changed the mode of her feminine roles and agriculture has become an important part of her way of life and not simply an occupation. Kamuben recalled how difficult and embarrassing it was to live in in-laws home:

When my husband died, my brother in-law took advantages of controlling joint family land and assets, without considering my children’s future. I had returned from Rajasthan boarder where my husband was working as a teacher to in-law’s home at Maritha located 5 kilometres away from my parents’ home at Badtal. That time my elder son was five years old, daughter was 3 years and youngest son was only

² A five-day long mass awareness campaign on “Sustainable Agriculture” was held at Mandvi Cluster of Surat District. The message of Sustainable Agriculture has been delivered through different communication materials viz. Padyatra, Skit and Audio-Visual to around 5,500 farmers of 13 PIM villages. This awareness campaign was culminated in a form of large gathering at Isar village in a ceremony participated by 3,000 farmers, of which, 75 per cent were women. In another five days Padyatra, approximately 200 to 300 people joined daily while travelling from one village to other. The contribution of Padyatra team towards the success of the event was remarkable, especially the women in the sense, since they had to set aside their household responsibilities for greater social and environmental cause. Around 20 per cent of the total cost of the awareness campaign was borne by different Canal Irrigation Societies and member institutions of Mahila Manch. Renowned development activists and academicians associated with the promotion of “Low External Input Sustainable Agriculture” and “Organic Farming” have addressed the issues.
one year old. From early morning to bed I did house chores for in-laws and children without hesitation, but still I was living a life of great fear. My brother-in-law frequently used to bite me in the back and dragged my hair, all to show their aggression and control by using vulgar language. Typically, therefore, when tribal girls marry, they not only belong to the in-law’s place but are also married to all extended family members. My father who was staying with me sometime has witnessed such brutal living conditions.

Kamuben’s in-laws hold a patriarchal kinship structure. She left in-laws house within a year while vulnerable situation of her obstructed her equal access to the land productive. She stayed with her parents to provide a space for her children to grow up well. Not until her son grew up was Kamuben failed to acquire her share of her land from in-laws home.

Badtal is a small village of just over sixteen hundred inhabitants, divided among three phalias (hamlet) with 365 households. Kamuben lives in Godan phadia (hamlet) consist of around 450 inhabitants divided among 115 households. The area receives a 646 mm of rainfall, 72 percent of which falls during the three monsoon months. Drawing from information gathered in the group discussion in 2006-07 I found that land is extremely limited, with an average of 1.2 hectares per household. The village is substantially agricultural, although the diamond polishing industry in nearby Surat town, textile industry in Surat and Ankaleswar also attract a good proportion of the village men, while women work increasingly outside the village, as agricultural labour for wealthy families. Patels, who are the dominant community have left the land for more productive engagement.

I will be showing how Kamuben resisted constructions of an incapable self when she acquired a piece of land and left her in-law’s place in order to combat drudgery. She used to help her father with some money required to pay bank interest or tax for their land from the pension money Rs. 250/ she draws for her x husband. She said that altogether those worked in her favour. After ten years of her stay in parent’s home, realizing her struggle, her father then extended four acres of rain-fed land as a contingency. Her situation brought her father to think about other two married daughters’ future as well. Father then divided their parental property equally among other two brother and two sisters. Kamuben said that this is not normal, if father have more land, and brother did agreed may provide a portion to their married daughter. Only when her son grew up did she petition for land from her in-law through Grampachayat meeting. In the first meeting her brother in-law agreed to provide two acres of land but was rain-fed. Kamuben’s youngest son bore the expenses of death ritual of her father in-law. In the Panch, third time when Kamuben demanded for a piece of irrigated land, her brother in-law did exchange an acre of land located near Nala (small tributary). Her second son is cultivating that land since

3 Of the 115 Hhs, 15 households are landless out of which 5 SHG members have got one buffalo each on loan from AKRSP(India). 15 have got Biogas and 25 have producing Vermin compost for their agricultural field and few also sell it. Chaudhry is the dominant caste, but people take different dharma. One primary school is available at the village, but to continue high school and college children have to travel Ghantoli Ashram or Sarkoi or Mandvi which are five kilometres by auto rickshaw (which is not affordable) or by bicycle. Such a situation compels most of the girl dropped out from higher education. There are 12 hand pumps and four wells available for drinking water which is also use for bathing and animal drinking in Badtal. Kamuben also rears few countryside chickens from which she earns Rs 1400.00 per year. She has 2 vermin compost beds (Size 3 feet by 10 feet). Before she used to sell it to the big farmers, now she used all the vermin in her agricultural field. She has a bio-gas plant attached with the toilet. Yearly she gets one quintal of manure by product, which fetches her Rs 3-4 a Kg.
five years. Since landownership was the primary source of collateral for credit, well-ownership closely followed contours of control over land. Only relatively wealthy people were able to mobilize capital to drill tube wells.

The story about the effort to obtain access to ground water by the partners of Kamuben’s groups. Kamuben recalled how these households did not have access to agricultural input, technology, loan or marketing arrangements and even their participation was ineffective in the GramSabha. In Badtala, often dalit and poor tribal were deprived to have a well of their own and unable to mobilize their effort to make a well on their own. Kamuben said that Jyamatiben from AKRSP(India) inspired us to attend meeting held in Jagruti Mahila Manch in 2000. 15 women from our village attended that meeting. Back home we formed 3 female SHGs with 35 members. We worked on watershed project and set up of bio-gas plants in the village. They found that with the help of AKRSP(India) and Tribal Sub Plant (TSP) scheme group of dalit male smallholders have constructed GW around Mandvi. In the year 2002, seven members with 11 acres of land came together and approached AKRSP(India) through Jagruti Mahila Manch (JMM women’s federation), Mandvi (see Figure 1 as below) to construct a GW. The idea of female GW was organized around contiguity of land holding of different SHG members and kinship rather than around peer group members of one SHG.

**Mahila Jagruti Sangathan (Federation) Mandvi**

Federations are supra village institutions (see APR 2006) which increase the functioning space available to its members in terms of access and leverage cohesiveness and share their experiences related to social life, capacity building, livelihood enhancement etc. The Women’s Federation (WF) is initially promoted as a structure to create bondage among the women Self Help Group members and male members of various village institutions. WF functions as an apex institution for Mahila Vikas Mandals (MVMs), which are running by the women members at the village level and also reach out to form new MVMs. However, gradually WF institutionalising with the objective of increasing the awareness among women regarding their rights, along with promoting greater participation and for being an agents of change in economic, social and political processes.

JMM has been formed in the year 2000 in Mandvi block of Narmada district and has registered in 2005. The structure of the federation has shown in Figure 1 reflects that WF has adopted a comprehensive approach which would be instrumental for dealing with the livelihood finance. Federation constitutes of 15 members committee

**Figure 1. Structure and Management System of the Mahila Jagruti Sangathan (women’s Federation Mandavi)**

Source: Developed by the author with due consultation with the MANDVI staff 2007.
with 1500 women members divided among 35 villages. The President and the Vice-President along with the management committee retains all sanctioning powers. The Secretary is responsible for accounts (auditing) and record keeping. Its members work on honorarium and are selected during the annual general meeting. Presently Jagruti Mahila Manch has three issues based sub-committees such as health committee, social security committee and liaisoning committee and two service provided group which provide NRM based services and Economic base services. In the NRM based services, women members from various Mahila Vikas Mandal have actively engaged in the small water irrigation management and enhancing agricultural productivity, animal husbandry and to help in experiment and scaling up of those activities. The Federation corpus is obtained from the federation membership fees (Rs.25).

Kamuben said that with regular visit to JMM office Mandvi we collected information on group well irrigation and shared our interest to construct a GW of our own. It was decided among the committee members to construct the well at the most appropriate site. The GW member from JMM reported to me that internal visits are arranged for the new group members and that learning process from the previously managed GW scheme reshape the new ideas for future management. Kamuben’s group organized 8 to 10 meetings and finalized their priorities, formed User Groups and delegated responsibilities prior to the GW scheme implementation and decided the way they would contribute their labour. The site (36 sq feet) identified for the purpose was to become a group property and no rent whatsoever would be charged by the owner. The tasks like the selection of Extension Volunteer, construction committee, arrangement of material, labour, transportation etc. were decided.

Kamuben recalled how for the whole day Bhatifalia women and their family members grappled with the appropriate site for the source of abundant ground water moving around the drilling machine. The bore machine checked six sites, but failed. In one site actually there was no hard rock but the men group took a wrong decision. At last when water burst out from beneath the dry field, almost 50 persons (women, men and children) present there were dancing with happiness and cheered up. Kamuben said that:

“Since generations we know the sky showers water, but underneath our land we have another source, which is going to back our equal standing with the big farmers and cultivate our land during summer season. Such a dream inspired the group to plan and manage our digging and cleaning work in such a manner, we would be very quickly internalizing this source for crop production. Meanwhile three female members split out and joined the male group in thought of relaxation from the hard rock head load. However, unfortunately, the group-well dug by male SHG found long depth rock than ours”.

Morom rock blocked their path to dig depth after 17 feet and two blasts were used to dig another five feet. The final outcome was a well with 23 feet depth having 6 kundis (small square tanks made for networking the pipe line where pumped water can be stored and canalised to the field). The demonstrated success was helped the group

\[4\] A study done by Agarwal et al. in 1998 on the Group well in Moskut and Sanjavan suggest that GW members were taken in 1995 to observe how Gawali village people manage one old well to supply water to households through pipes, both for drinking water and also for irrigation on the homestead land. Another study done by Koppen et al. 2001 documented that the option to deepen the well and use it for irrigation purposes by installing a mechanized pump was discussed independently in the male GVM and in the MVM in Sagbara. With some hesitant it was decided to give the charge to women to manage the irrigation scheme. Then Jambar group women offered a visit to Hazaribag in Bihar to experience how women group successfully manage a mechanized pump scheme with the support of the NGO PRADAN.
to convert their 11 acres of rain-fed land into year round irrigated land since two years.

This input has brought change in women’s cultivation pattern. Now they grow onion, *mugfadi* (Groundnut), *Ganhu* (Wheat) and *Sherdi* (Sugarcane). Besides the cultivation of rice, *Tuar* (lentil) and *Makai* (Maize) in the *kharif* (rainy season), Kamuben has been able to take Sugarcane in three acres of land and wheat (two quintal) and *Tuar* (two quintal) in one acre by irrigating land in summer. She shared that the grosses cropped areas has been double and the productivity has increased three-fold. One group member has cultivated one acre of sugarcane and others cultivated *Mungphadi* (ground-nut) in other seven acres of land. Each acre of Groundnut provided them with Rs. 8000/- net profit. Sugarcane gives twice the production in two year. Second year investment per acre is one fourth of the first year. Kamuben is able to produce 75 tons (six trucks) of sugar cane, but the first year profit for Kamuben is only Rs. 15,000, while in the second year, she would get a net profit Rs. 62,000. She found sugarcane is a profitable crop to continue for the next sowing.

Kamuben like most of the poor tribe relied on the monsoon for cultivating mainly subsistence crops. Because of this uncertainty, they did not try to grow any cash crop. They shared that their experience of growing a cash crop was first of its kind, so crops were inferior to the large landholder. Moreover, since this was the first time they were experimenting with a cash crop, it took women to adapt to the system. They are expecting that given the management skill, a third crop can be produced. Group well water brought food security for these families though they found the availability of water in summer is still insufficient. Actually, Kamuben bore a loss of another 15 tons of sugarcane when the member on whose land the well was dug did not allow irrigation at a crucial moment. Not only that, three other families cultivating groundnut are sharing the scarce water. Negotiation for the use of scarce water in turn rule has been violated by the groups. “Well-boring is expensive for us” said Kamuben. Groups have discussed such issues at the Federation office and AKRSP(India) staff has provided support for blasting *morom* for another seven feet depth. They would start digging, cleaning and mason activities by this end of May 2007.
The group’s struggle to maintain access to ground water throughout the year made me to trace the average depth of the wells around. Kamuben’s group gave me a rough estimation of tube-well around their well used for irrigation. There are 10 bore well and (five run with diesel machine and five with electric motor) five open well (run with either electric or diesel) on the Godan falia side of the road and five bore well and three open well on the right side of the main road. Altogether they provide water for approximately 30 hectares of land around. Unsurprisingly, while other machines are either five or ten HP, efficient to pump water to distant land, Kamuben’s group has a 5HP machine. The highest depth of well is forty ft but the average depth varies from 25 ft to 32 ft each, and all are found deeper than Kamuben’s GW.

Kamuben argues that wells hardly dried up, this had not been such a problem in the past, even in years of severe drought. Only with the advent of new pumping technology, has it become possible to bore deep wells and extract water in such quantities so as to cause a seasonal drying up of wells with less depth. At the same time, an insatiable demand for water has been created by Green Revolution agrarian movement of cultivating high-yielding hybrid crop varieties. These are cultivated by the medium land holders in her community which need sufficient watering. Those who have access to land have access to credit and construct deep tube-wells with submersible pumps to use and sell water to their neighbours. This has lead to an over exploitation of ground water resource, and it is likely to lead in time to deepen Kamuben’s group to dig deeper and deeper. The phenomenon appears no “tragedy” for those who have the resources to drill deep rather put in advantage position to benefit from the wider scarcity.

Kamuben has decided to divide her land equally between her son and daughter. When I asked if such a land distribution a normative practice in the tribal family? Kamuben said to me that you know, a widow excluded from cultivated land of in-law and living with children to grew up can only explain to you how crucial agricultural productivity and hence control over a piece of land can be for her daughter.5

Although there are no deeply entrenched taboos and restrictions ascribed on Vasava tribal widows, being debarred from a normal life, they generally find themselves isolated and at the receiving end. Research in male farming system in India and elsewhere indicates, women wanting to farm by themselves, are in a minority6 –as the definition of a ‘male farming’ system and often ‘taboos’ (Agarwal 1994 a, b) implies – facing deep rooted sexist cultural and developmental norms. Given the command over land Kamuben’s performances ensures her better livelihood, food and social security. She said that I hardly listen to the patriarchal division of ownership over land practices or thought of living with the mercy of them. Me and my daughter do most of the strenuous labour in our field then tell me why men only legitimize their rights to land holding? Yet, my daughter and son-

5 Legally though daughter has equal claim over land and even daughter play a key witness role on family land and property distribution among the brothers still as a daughter or daughter in-law her say on her need is little considered. Lack of in-depth research on the kinship-support system, social and security such as life insurance, benefits or pension and on the changing status of widows for example Kamuben’s life story are need rigorous analysis.

6 Like widows, single, divorced and whose husband engaged in factory work or non-farm activities, or women who have inherit land rights in their own name face many problems. As in a highly skewed gendered organization of farming, agricultural growth requires not only more gendered-balanced agricultural external support but also, and certainly more difficult, profound challenging of the economic, political and cultural gender discrimination intrinsic to male monopolization of production factors, including women’s labour.
in-law have performed a more responsive role in farm activity; my son takes care of milching cows and buffaloes and is a member of community dairy board.

In the process of Kamuben’s engagement with the Women’s Federation in AKRSP(India), and within her lifestyle she has certainly found as the self lived and enlightened than other widow women in her community and around. She found herself as a down-to-earth farmer and social activist. Kamuben’s conviction for equal distribution of land among daughter and son is also supported by the fact that women took over the traditional male role of farm manager bringing an egalitarian distribution of resources. A higher chance of survival of agricultural productivity is more frequently tied to women farm heads who need to be recognised by the registration of land rights and formal lists of farmers. The next story is about the female GW manager of Sathvav village.

**Sathvav**

Sathvav village consists of seven phalia (hamlet). Ambaben aged about 28 is one SHG member and GW manager. She belongs to Bhati phalia consisting of 2000 inhabitants divided among 300 households. The main caste of the villages is Vasava and Harijan. With the inception of 3 female SHG in the year 2001 with a total of 36 members in the Mahila Vikas Mandal in Bhati phalia took over the old Gram Vikash Mandal. Presently, MVM has its own savings of Rs. 10,000/-. Of the three SHGs, Gayatri Juth had savings of Rs 40,000, out of which they leased four acres of land for Rs. 25,000 for five years. It has facilitated to get a credit of Rs. 25,000 from Baroda Bank. Gayatri Juth women members’ performances, roles and responsibility qualified for an investment for GW. SHG members borrow money from their own revolving fund and bank credit for a direct investment in the agricultural productivity. They would pay back the money within six months. Such loan practices save them to pay the interest rate to the bank and not to borrow money from the local money lender with high interest rate.

Ambaben the GW leader said that apart from their labour contribution, members for the GW were paid Rs. 500/- as cash contribution towards the construction of the group well. Two members from each household came to contribute their labour till the well work done. For another 17 ft depth they used 8 time blast, which cost Rs. 17,500. Ten truck loads of stones cleared out from the well, which were sold to the Vanias for Rs.600 each. Five Kundies (store water distributaries point) were set up with 800ft length pipe networking. Ambaben said that women engaged in digging have to come after completing their household chores, such as cooking, cleaning, childcare, serving the old and animals and so on, while this is not the case for men. Ambaben said that our finger paralysed and shoulders ached, and then once we returned home we had to clean all dirty clothes. This group planned a step ahead. They have started a collective farming and cultivated ladyfinger and grass in the 4 acres of land they have leased last year. The water from this well is also provided free of charge for the GW members for cleaning and cattle drinking.

These group members have started using water since November 2006. The 8 beneficiaries have 8 acres of land around this well. They pay Rs. 5 per hour, while for other users they charge Rs. 25 and therefore, they have saved Rs. 1500. Previously, members used to purchase green grass in groups and distribute it among the members. This used to save them the transportation cost and the material obtained would be relatively cheaper. Now, four members used irrigation water to cultivate grass sufficient for milching cows and buffalos and to continue the supply of four litres of milk to the milk society in this 42
degree centigrade summer heat. Now, they have started purchasing cattle feed and other items in a group. The productivity increased two-fold from jowar and mung and from mungfadi. GW members hope that their first experiment with the field as a whole taught them to cultivate better next year. In their families, seasonal migration has been reduced.

Members informed me that 10 percent of the household in this falia consume liquor regularly. All the members discussed this vexing problem on how to stop the every day torture against women and their ignorance towards children. They decided that initially they might not stop liquor making and selling in the entire village, but that would intervene such violence against women in these household. They also put this issue in the Gramsabha and with little hesitation Sarpanch came forward and now, women atrocities have reduced. The members also work as watchdogs for the cleanliness of the village road and sewerage, and have made the tube well function.

**Bhatkhai**

Bhatkhai consist of 105 households. In the year 2000, there were 3 SHGs but by 2003, four new SHGs were formed with total members of 71. Miraben, the leader of the GW members said that they started with a savings of Rs. 30 but now, each member saves Rs. 50 per month. Jayamatiben said, three SHGs have linked to the bank credit programme, four into Vadi project (horticulture), and 46 members have received the bio-gas benefits till 2006. Of the 13 members from Vandana SHG, six members with 8 acres of land constructed the GW sponsored by TSP and AKRSP(India).

They have dug the well and drained 1,560 feet to set up the pipeline to channel water to five Kundis. Two persons from each household worked for two months to complete this GW work. They have started using water since December 2006. Of the Rs. 3,655 savings obtained from selling irrigation water, Champaben has alone bought water for Rs. 1,255 for this rabi (summer crop) season for 3 acres of land. The unit of prices and terms across the group is couched by labour contribution terms.

The sugar factory from Surat would pay Rs. 1,200 per ton for 150 ton of Sugarcane Champaben produced this year. Now, Champaben takes decision on crop farming and investment in her...
home. Besides, group members have been cultivating vegetables and maize and planted good variety of mangos. The cultivated land nearby now has become a place for bathing, cleaning, cow and buffalo keeping. Group members who have less than one acre of land experimented with vegetable farming and found that though it is time consuming it brings higher profit than any other crops. Bhanuben, another group member shared how in the forest conservation committee all 105 members are male though there are 13 women headed households. She gave a description of how the pattern of spending her loan money from the revolving fund has been changed. For example, before she had borrowed Rs. 500, Rs. 2,000 to pay school fees, Rs. 3,000 for daughter’s illness, and now she has borrowed Rs. 5,000 for buying a Motorbike for her husband and Rs. 3,000 for cultivating vegetable.

Out of the savings from water-selling, Miraben said that they have thought of buying a Garghanti (machine for grinding wheat floor and Jawar) for the village people. They would charge Rs. 3 per one KG for member and Rs. 4 to the villagers. Miraben said that “you know this would be in high demand as villagers would not have to walk long distance in the hot summer and muddy rainy season”.

**Wider Social Impact of Group-well**

I conclude with some observations drawn from the above group and individual conversation and with other seven GW members in the field. Kamuben, Ambaben and Miraben have shown how the designing and implementing of a gender participatory intervention in small irrigation approach helps us to understand the current systems of agricultural growth. They found that mainstream gender concern in the factor of production (land, labour, capital, water, technology, inputs, credit and markets) has enhanced their agricultural productivity, sustainable operation, and maintenance of infrastructure and effective women’s participation.

The development of rural India will have to go beyond patriarchal mode of farming and agricultural activities. Women’s contribution to manage farm, small irrigation schemes, water harvesting technology and a strong focus on their decision making in agri-based livelihood and agricultural productivity must get equal focus. As I have shown, SHGs are the most eloquent examples of the new “agricultural economy” emerging in India today. We have seen GW users represent a model of participatory development with a high level of social mobilization, capacity building of the women to manage small irrigation schemes. This enabled increase in agricultural productivity and helped Village Institutions stay stable in all its dimensions. The unique thing about the GW users is that they are members belonging to the different SHGs of one Mahila Vikas Mandal further collectivising their capability to manage various farm and non-farm livelihood. They are proving themselves to be effective instruments of income generation (micro-credit users), agri-production and empowerment of women.

The emerging field of agricultural production in the semi-arid region of tribal belt is being continuously expanded by integration of women into new mode of agricultural practices.

**Impact on Agricultural Productivity**

We should bear in mind that rural women who generally bear the primary responsibility for the food security and nutrition of their children, are the poorest and the most vulnerable. Whilst pre-capitalist production relations, were unfavourable to the marginalized farmers, it was the awakening of social relations that favoured economic growth, which enabled women cultiva-
tors to enhance productivity. Agricultural productivity of the marginal women farmers in Mandvi only occurred following concentrated AKRSP(India) efforts to facilitate TSP and Mahila Manch to diminish moneylender power, and provide alternative source of irrigation and extension services. In all the cases, a lack of land ownership and knowledge of technical know how may have been a primary explanation for the late adoption of GW irrigation by women. Case studies suggest that investment in general increased only after women gained access to revolving fund. Small farmers who fell below a minimum landholding threshold for collateral for a bank loan had to make do with smaller amount of credit available from revolving fund. However, this opportunity was by no means equally available to the poor non-members.

The Badtal, Bhatkhai and Sathvav experiences suggest that while access to ground water substantially transforms economic relations and spurs growth, the organizational and management capability of women can guarantee profit-making opportunities. The group members shared with me that such small irrigation schemes are able to engage them in the small agricultural field throughout the year, and hence migration has stopped in small families. However, in a large family, if adult members are more than that of the labour required for the land, or to supplement the investment in the agricultural field they migrate for better livelihood options. Traditionally, women wanting to farm by themselves are those who are widowed, single, divorced or destitute, but that is a minority. However that trend has changed.

**On participation and decision-making**

While participation of women tenants in the community canal irrigation management association was found to be low, in case of women GW they have been directly involved in implementation and supervision of construction and set their own priorities for emergency supply and maintenance. Another spontaneous trend observed in three Group well irrigation schemes in Mandvi was that women farmers increasingly engage in collective action and decision-making. They participate in irrigation water distribution, machine maintenance, accounting and crop production as well as in organizing meetings for practical irrigation affairs, mass awareness, servicing the women cultivators and livestock keepers. The extents of participation of committee members

![Figure 4. Onion and sugarcane boom by group-well irrigation.](image)
are able to deliver better services and avoid po-
itical interventions. Input provision, agricultural 
training, agri-business, rotation schedule and 
cropping calendar and organizing meetings on 
practical irrigation affairs with different 
stakeholders (irrigation dept. Sarpanch, officials 
and AKRSPi staffs) are other pre-requisites for 
profitable farming and are necessary conditions 
for sustainable productivity and direct engage-
ment. Women leaders and WU committee mem-
bers are to receive sufficient accountancy, 
negotiation, leadership and agricultural exten-
sion services training in order to catch up with 
the commencing demand from the new genera-
tion of women farmers.

The GW programme commenced with an objec-
tive of “improving the agricultural productivity” 
and hence training programmes and capacity 
building exercises have been geared towards 
water distribution and not water management. 
Group well women perceived that WUA for 
water management can be strengthened through 
aricultural training, inputs, and market provi-
sion, redesign and rehabilitation of infrastructure. 
Self-monitoring and evaluation processes and 
government liaisons are other prerequisites.

Staging women in various sites of interventions/ 
struggle (Mohanty 1991, Acharya and Lund 
2002), AKRSP(India) has shown them to chose 
right possibilities ahead. This study emphasizes 
that a pattern of gender balance agricultural 
growth can not afford to ignore such an egal-
tarian mode of production practice within which 
tribal women in Gujarat are farmers in their own 
right and exercising their full human potential 
to contribute to their household food security and 
negotiating their identity (ies). GW association has 
a better impact on the agricultural productivity 
and gender equity but still is a peripheral body 
in the gramsabha or grampanchayat. Sustaining 
the enabling environment, GW has the potential 
to promote women farmers’ association that 
could function as responsible and self-reliant in 
the best interest of the tribal women’s rising pros-
perity and gender equity within the community 
and beyond. Agricultural policy-makers and in-
tervention agencies, including irrigation agencies 
and practitioners that seek to promote agricul-
tural growth would foster women’s access to and 
control over such factors both in the household 
and institutions.
REFERENCES


Groenfeldt, David (2003) Background paper on Participatory Irrigation Management Circulated at the World Water Forum III


### Annexure 1

**Table 2. Group-Wells managed by women from 2002-2006 (as shown in bold) sponsored by Tribal Sub Plan Scheme through AKRSP(India) for MANDVI Cluster**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Project</th>
<th>Sr. No.</th>
<th>Project</th>
<th>SrNo.</th>
<th>Project</th>
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<td>Junwan Gw</td>
<td>1</td>
<td>Badtal Gw - 2</td>
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<td>Gw-Vahar-2</td>
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<td>Badtal-1 Gw (B)</td>
<td>2</td>
<td>Bhatkhai Gw – 2 (A)</td>
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<tr>
<td>3</td>
<td>MP-Vahar</td>
<td>3</td>
<td>Bedada-2 GW (B)</td>
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<td>Soli Gw - 1</td>
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<td>Devgiri-2 GW (B)</td>
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<td>Sathvav Gw – 1 (A)</td>
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<td>12</td>
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<tr>
<td>13</td>
<td>Gw Bedada-1 B)*</td>
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<tr>
<td>14</td>
<td>Gw Devgiri -1 B)</td>
<td>14</td>
<td></td>
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<td>Total</td>
<td>24</td>
<td>12</td>
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Grand total GW 24+12+17=53

*B/A are the Grade assigned to the Group based on their overall performances so far.

Currency conversion (August 2007): 1$=Rs 41; 1 • = Rs 55; 1 £ = Rs 82
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**2005**

- **Sustainability of Village Institutions created through NGO interventions**
  - The Case of AKRSP(I) Promoted Participatory Irrigation Management Societies in South Gujarat
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  - Biswaranjan Patnaik
Gender and Participation in Low-cost Irrigation Schemes
A Case of AKRSP(India)’s Interventions in Tribal Gujarat

The present paper concerns marginal tribal landholders, especially women’s integration in ground water management in Gujarat, India. Although, irrigation policies in Gujarat have attempted to address some of the ground water management problems in the semi-arid region, policy-making has hardly designed and implemented the gender equity considerations, factors of production and the recognition that non-exploitative gender production relations foster agrarian productivity. The main question addressed in this study does the irrigation system bring any change in the trend of women’s participation in agricultural practices at all? Does the current mode of women’s participation in the irrigation management (increasingly engage in implementation and supervision, collective action and decision-making) have brought change in their lives?

This study analyzes the effectiveness of the model environment created by AKRSP(India) in the Irrigation Management process for enhancing collective action and dialogue between users, agencies and governments. The significance of experience of female group members managing group-well, often narrated orally, to shed light on their perspectives on new challenges to what overtake as “farm women”. Cultural politics of the integration of new forms of women’s organization into the low-cost water conservation and management skills comes out to be the major reason as they shape the “waterscape” and agricultural productivities. Study has shown that GW association has a better impact on the agricultural productivity and gender equity but still is a peripheral body in the gram sabha or gram panchayat. Furthermore, the author has emphasized that sustaining the enabling environment, GW has the potential to promote women farmers’ association that could function as responsible and self-reliant in the best interest of the tribal women’s rising prosperity and gender equity within the community and beyond. Agricultural policy-makers and intervention agencies, including irrigation agencies and practitioners that seek to promote agricultural growth would foster women’s access to and control over such factors both in the household and institutions.

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