

MANAGING WATER FOR THE PEOPLE BY THE PEOPLE

A Participatory Assessment on SEWA's Experiences with Rural Water Resource
Management in Gujarat



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TABLE OF CONTENTS

TABLE OF CONTENTS	1
ACKNOWLEDGMENTS	5
EXECUTIVE SUMMARY	6
PREFACE	7
CHAPTER 1 ♦ OVERVIEW ON SEWA AND WATER IN GUJARAT	8
1.1 SEWA—A Brief Background	8
1.2 Water Resources in Gujarat	9
1.3 SEWA and the Regional Water Supply Scheme	12
1.4 Water as a Regenerative Input Program	16
1.4.1 The Datrana Pond	18
1.5 Watershed Development Program	20
1.5.1 The Piprala Checkdam	22
1.6 The Water Campaign	23
CHAPTER 2 ♦ ASSESSMENT METHODOLOGY	26
2.1 The Research Team	26
2.2 The Selection of Activities	27
2.2.1 Activity #1	27
2.2.2 Activities #2 and #3	28
2.3 Principles	29
2.4 Methodology	29
2.5 Location and Timing	32
2.6 Participants	33
2.7 Feedback—Success and Constraints	35
CHAPTER 3 ♦ WATER RESOURCE MANAGEMENT PRINCIPLES ADDRESSED	36
Introduction	36

Principle 1: Water Resource And Catchment Protection Are Essential	38
3.1.1 Principle 1: Background	38
3.1.2 Principle 1: Assessment Results	40
3.1.3 Principle 1: Lessons Learned	44
Principle 2: Adequate Water Allocation Needs To Be Agreed Upon Between Stakeholders Within A National Framework	45
3.2.1 Principle 2: Background	45
3.2.2 Principle 2: Assessment Results	46
3.2.3 Principle 2: Lessons Learned	49
Principle 3: Efficient Water Use Is Essential And Often An Important Water Source	51
3.3.1 Principle 3: Background	51
3.3.2 Principle 3: Results of the Assessment	51
3.3.3 Principle 3: Lessons Learned	53
Principle 4: Management Needs To Be Taken Care Of At The Lowest Appropriate Level.	54
3.4.1 Principle 4: Background	54
3.4.2 Principle 4: Results of the Assessment	55
3.4.3 Principle 4: Lessons Learned	64
Principle 5: The Involvement Of All Stakeholders Is Required.	65
3.5.1 Principle 5: Background	65
3.5.2 Principle 5: Results of the Assessment	67
3.5.3 Principle 5: Lessons Learned	69
Principle 6: Striking A Gender Balance Is Needed As Activities Relate To Different Roles Of Men And Women.	70
3.6.1 Principle 6: Background	70
3.6.2 Principle 6: Results of the Assessment:	73
3.6.3 Principle 6: Lessons Learned	74
Principle 7: Skills Development And Capacity Building Are The Key To Sustainability	75
3.7.1 Principle 7: Background	75
3.7.2 Principle 7: Results of the Assessment	76
3.7.3 Principle 7: Lessons Learned	81
Principle 8: Water Is Treated As Having An Economic And Social Value	82

3.8.1 Principle 8: Background	82
3.8.2 Principle 8: Results of the Assessment	83
3.8.3 Principle 8: Lessons Learned	84
CHAPTER 4 ♦ CONCLUSION	85
<i>ANNEX 1 : SAMPLE PAGES OF THE PARTICIPATORY EXERCISE BOOKLETS AT WORKSHOP 3, THE PIPRALA CHECKDAM</i>	88
<i>ANNEX 2 : PROGRAM AND LIST OF PARTICIPANTS TO THE PRELIMINARY PRESENTATION OF THE ANALYSIS IN AHMEDABAD</i>	89
LIST OF ABBREVIATIONS	90
GUJARATI GLOSSARY	91

TABLE OF FIGURES

Figure 1 : SEWA's Assessment on Full Employment _____	8
Figure 2 : Map of Gujarat State, Banaskantha District, and Santalpur and Radhanpur Blocks _____	10
Figure 3 : Employment in Banaskantha _____	11
Figure 4 : Profile of Santalpur and Radhanpur Blocks _____	14
Figure 5 : SEWA's Rural Development Activities, 1996 _____	16
Figure 6 : The Water Campaign, 1996 _____	24
Figure 7 : SEWA's Activities in the Water Sector _____	25
Figure 8: Building Leadership Through the Water Campaign _____	58
Figure 9 : Evaluation of Local Campaign Leaders _____	59
Figure 10 : The Datrana Pond Management Structure _____	60
Figure 11 : Future Goals for the Water Campaign _____	77
Figure 12 : Building Capacity through the Pond Process _____	78
Figure 13 : Building Capacity Through the Checkdam Process _____	80

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Executive Summary

Introduction: SEWA's work in rural water resource management stemmed from its attempt to improve the economic and social conditions of the poorest rural communities in Gujarat, India. These rural communities depend on water for both their lives and their livelihoods. However, human activity, the harsh natural conditions of the desert, and mismanaged government water schemes have deprived them of both an adequate quantity and quality of accessible water. Without water, these communities cannot sustain a steady economic activity. This has contributed to poor health, low incomes, and consistent migration.

SEWA's Approach: The central focus of SEWA's approach to rural water resource management is building local management committees. These committees are established through local participation and involved in every step of the project cycle. Through both on the job training and formal classroom training, SEWA aims to build the capacity of the local communities to ultimately take over and manage their own local water resources. Capacity is based on a productive and viable combination of traditional and modern knowledge, systems, and processes.

Objectives: This study aims to (1) assess SEWA's approaches in rural water resource management through the participation of stakeholders at every level of the project, with a focus on the stakeholders at the lowest levels; (2) present the assessment in the format that was established by the participants of the IRC workshop to help others compare SEWA's experiences with the experiences of other communities.; and (3) build the capacity of local communities and managers to partake and eventually conduct similar assessments on their own development work.

Scope: This study covered three of SEWA's water projects in different areas of Gujarat:

1. The Water Campaign, initiated in 258 villages in 9 districts,
2. An agrifilm lined pond in Datrana Village of Banaskantha District, Gujarat, and
3. A checkdam in Piprala Village of Banaskantha District, Gujarat.

The projects addresses water used for drinking and irrigation purposes at the maintenance and planning stages.

Methodology: Three main methods were used to extract the necessary data for this study. The first was informal discussions in the villages with local women and men. The second was participating in the regular meetings held by the local committees. The third was holding the Participatory Evaluation Writing Workshops. One workshop was held for each activity. The participants to the workshops comprised of local managers and users of the water projects. The methodology for this study was designed to also serve as a capacity building exercise to increase local communities abilities to assess their own projects. The methodology aimed to extract a subjective assessment of the projects, based primarily on the input of the local users and managers of the local water resources. It is SEWA's hope that such a study will prove useful in complementing and cross-checking the traditional cost-benefit analyses.

Major Findings: The most common theme expressed by almost every participant in the study was that ensuring community participation in every step of the project cycle is essential to increasing local awareness, interest, and management capabilities. The majority of the principles were seen as a means to ownership and not as an end in and of themselves. Therefore, they were rarely addressed or assessed alone. Rather, the principles were found to influence one another and were found to be most useful when combined into an integrated approach. All 8 principles are being addressed in SEWA's projects, and the participants reflected a high level of awareness and understanding about the importance and mechanics of each principle. While progress has been made, translating these principles into reality is a long-term process, and stakeholders at all levels, agreed that the struggle is far from over as yet.

Preface

This study is part of a larger project aiming to assess and disseminate the practical experiences made in water resource management. Constant changes in human activity and natural environments are affecting the supply and demand of our water each day. In order to keep pace with these changes, it is vital that increased attention be paid to improving the management of water resources. However, although there has been a rapid rise in drinking water supply facilities the world over, information on proper management is not broadly disseminated and efforts to apply it are uneven and sporadic.

In response to the growing demand for more information on ways to improve water resource management, the IRC International Water and Sanitation Center and the United Nations Development Program (UNDP), initiated the "Promising Water Resources Management Approaches in the Drinking Water Supply and Sanitation Sector." The project documents and disseminates experiences in water resource management in 8 countries. The case studies cover different levels of intervention, from local to regional to national. During the Preparatory Workshop held 20-29 November 1996 in the Netherlands, the participants agreed that each study must (1) use participatory assessment methods and (2) use the 8 principles outline below. These principles were identified by the participants as essential indicators of successful water resource management.

8 PRINCIPLES

1. Water resource and catchment protection are essential.
2. Adequate water allocation needs to be agreed upon between stakeholders within a national framework.
3. Efficient water use is essential and often an important water source.
4. Management needs to be taken care of at the lowest appropriate level.
5. The involvement of all stakeholders is required.
6. Striking a gender balance is needed as activities relate to different roles of men and women.
7. Skills development and capacity building are the key to sustainability.
8. Water is treated as having an economic and social value.

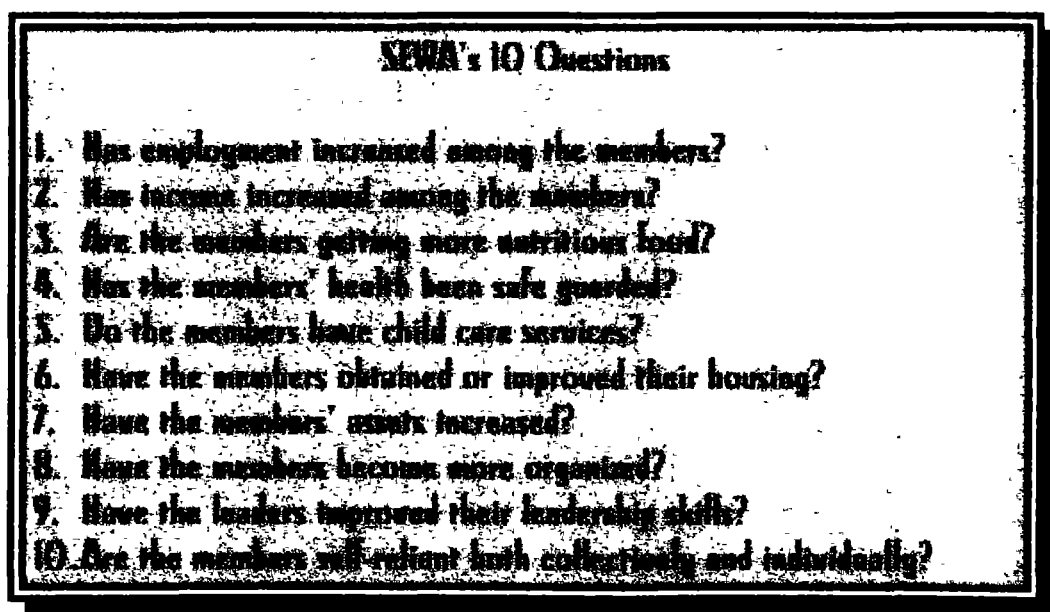
This study will highlight the Self Employed Women's Association's (SEWA) approach to building community-level and state-level management practices under the Santalpur Regional Water Supply Scheme (SRWSS) in Gujarat, India. SEWA's primary goal has been to integrate water concerns with women's concerns and income generation at the local level. SEWA aims to build the local women's awareness and capacity to own and manage their own water resources.

Chapter 1 ♦ Overview on SEWA and Water in Gujarat

1.1 SEWA--A Brief Background

The Self Employed Women's Association (SEWA) is a trade union for poor women in the informal sector. Through a combination of unions, cooperatives, and support services, SEWA activities over the last 24 years have facilitated self-reliance among thousands of the poorest people in the nation. SEWA believes that it is every woman's inalienable right to work and have access to nutritious food, medical care, child care, social security, and adequate housing. Development efforts must be integrated in order to maximize their benefits. In addition, physical achievements must be complemented with capacity building and increased awareness among the beneficiaries to ensure the projects' sustainability. Together, these factors form SEWA's concept of full employment. SEWA uses 10 questions to assess the extent to which each project has been able to ensure full employment and improve all aspects of the beneficiaries' lives (see *Figure 1 : SEWA's Assessment on Full Employment* on page 8). Today, SEWA's membership is 213,000.

Figure 1 : SEWA's Assessment on Full Employment



Two-thirds of SEWA's membership is rural. Rural areas in Gujarat comprise 60% of the state. Rural lands are some of the most degraded land in the nation--dry, barren and saline. Because of the harsh natural conditions and the lack of resources, the majority of the rural population survives on a subsistence level. Thus the most pressing need among SEWA's rural membership is for a steady income. In line with SEWA's main approach, the rural development programs aim to provide full employment to its members through an integrated approach. However, unlike the urban based programs, the rural programs focus on ecological regeneration, because land is the primary means of livelihood for the rural poor.

1.2 Water Resources in Gujarat

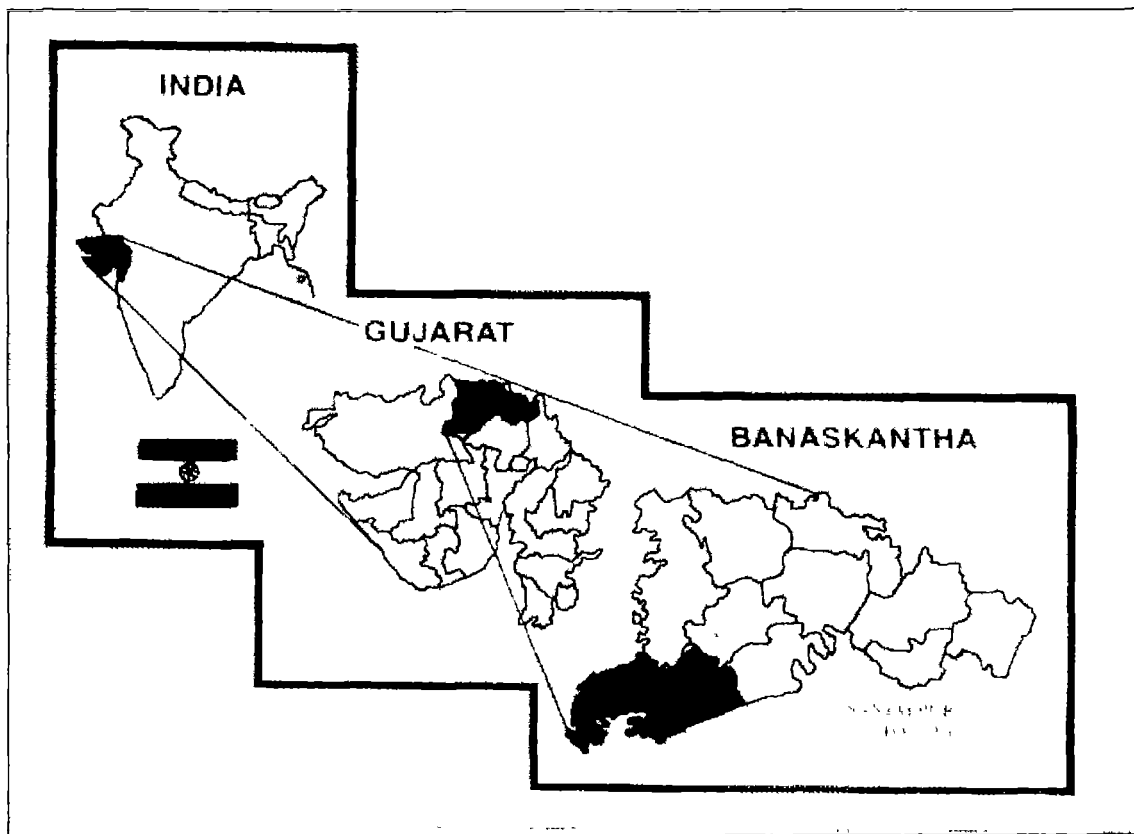
(* See Figure 2 : Map of Gujarat State, Banaskantha District, and Santalpur and Radhanpur Blocks on page 10)

The state of Gujarat in Western India enjoys the fourth highest per capita income in the nation, and it is consistently ranked among the top states in India's industrial development. However, looming over the State's growth plans is an acute water shortage that affects more than 70% of Gujarat's villages each year. Ironically, Gujarat's demand for water for domestic and industrial use is only 1,748 mm³/yr, or 6% of the existing water resource potential.¹ The state's total water resource potential, without the Narmada, is approximately 30,000 mm³/yr. Moreover, to date the state has developed almost 60% of Gujarat's water resource potential.² However, a regional disparity in natural water resources in the state combined with the State's top-down water supply strategies have led to an uneven distribution of water between the rich and the poor. The rural poor living in areas with few natural resources suffer the most.

¹ *Report Of The Committee On Estimation Of Ground Water Resource And Irrigation Potential In Gujarat.* Government of Gujarat (Gandhinagar, 1992)

² *Dynamics of Drinking Water in Rural Gujarat* Hirway, Indra and Patel, P (Centre for Water Resources, Ahmedabad, May 1994).

Figure 2 : Map of Gujarat State, Banaskantha District, and Santalpur and Radhanpur Blocks

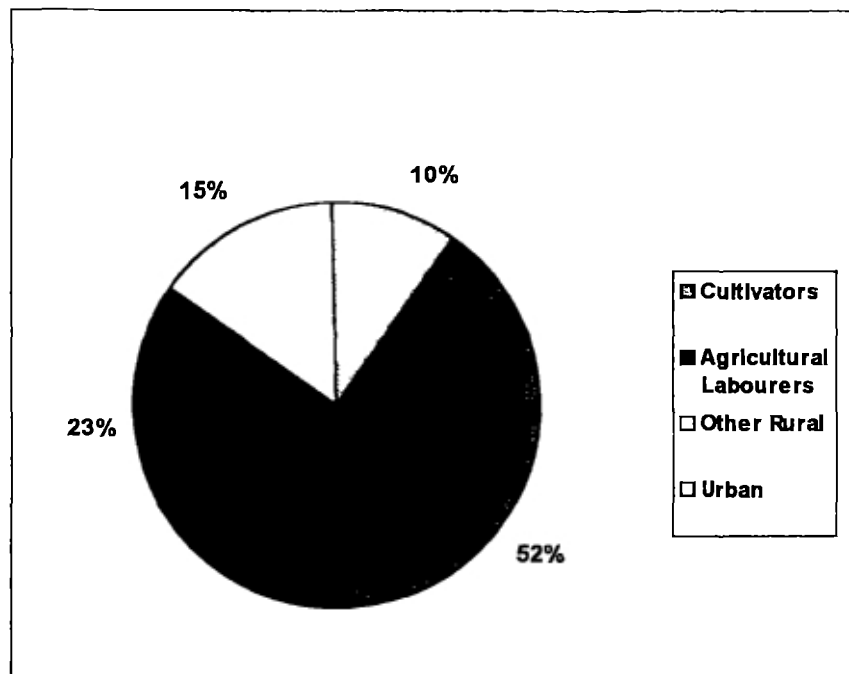


One of the poorest districts in this regard is Banaskantha District in North Gujarat. Surrounded by the Thar Desert to the north and the salt-crusted Rann of Kutch to the west, Banaskantha District is an arid, land locked zone of 12, 703 kms² and 1,374 villages. Most of the District is covered by dirt roads lined with *Prosopis Juliflora*, mud homes, and a few farms of castor (oil seeds) and bajri (millet) struggling to survive the harsh, dry climate. Banaskantha's name derives from the Banas River, which originates in the Aravalli Mountain Range to the north. From the Aravalli, the Banas River winds down through the districts into the low lying alluvial plains of the surrounding deserts. For most of the year, the Banas River fails to provide water to the surrounding villages; during the monsoons, the River floods the villages on the edge of the deserts.

The total population of Banaskantha is 2,162,578, of which 90% is rural.³ Agriculture and dairy production are the primary livelihoods. 52% of the people are cultivators, and 23% are agricultural laborers (see *Figure 3 : Employment in Banaskantha* on page 11).

³ Census 1991, Banaskantha District, Gujarat, India

Figure 3 : Employment in Banaskantha



Agriculture is mainly rainfed, and the frequent droughts and few natural resources have made rural work sporadic. Only 39% of the population enjoys a steady income for more than 6 months of the year. The rest must constantly migrate in search of work. The migration, in turn, has added greater pressure to the encroaching desert wasteland and disrupted the maintenance of village facilities.

According to the last census (1991), 74% of women are considered unemployed. However, 38% of women are said to be cultivators and 45% are agricultural laborers. In other words, most of the women in the area are self-employed, surviving on whatever wages they can find throughout the year. 7.5% of the population and 15% of women are marginal workers. The literacy rate in Banaskantha is 39%, compared to 61% in Gujarat. According to the 1991 Census, only 23% of the women in Banaskantha are literate. However, according to SEWA's studies, women's literacy rate in the villages SEWA is working, is only 8%. The infant mortality rate is the third highest in Gujarat.⁴

Foremost among the needs of Banaskantha's marginal rural people has been the urgent need for more water. Banaskantha has been declared a drought prone area by the Revenue Department of the Indian Government.

⁴ Census 1991, Banaskantha District, Gujarat, India

Droughts have occurred almost every 3 years in the past 3 decades. Even the highest estimates report that the average amount of water for household purposes (i.e. drinking, bathing, cooking, washing clothes and utensils, and feeding cattle) in Banaskantha is 55 liters per day. It is estimated that those in the lowest income brackets, who normally live in or on the desert borders, survive on less than 15 liters per head per day⁵. According to the District Rural Development Agency of Banaskantha, 15 liters of water per day is the minimum requirement for feeding the cattle alone.

Although the alluvial plains create a high potential for groundwater aquifers, rich farmers in the neighboring district of Mehsana have worsened the situation by overdrawing good ground water through deep tube wells for irrigation purposes. Much of this was due to the government's emphasis on increased agriculture and irrigation policies in the 1970s and 1980s. Rich farmers and industries not only had the money and power to tap distant ground water sources, but they often failed to pay the electricity charges of drawing ground water, resulting in excessive extraction. In recent years, the water table in Banaskantha has decreased by 3-5 meters.

In addition, the level of Fluoride and Nitrate in the water has increased due to the increased use of fertilizers and chemicals for agricultural and industrial use. Furthermore, the deserts have made the middle and lower aquifers in the area saline. Borewells as deep as 700-800 feet provide only salty water.

1.3 SEWA and the Regional Water Supply Scheme

The Gujarat Water Supply and Sewerage Board (GWSSB) has been in charge of the state's drinking water programs since 1979. Its water activities fall into three categories:

1. Individual schemes in which GWSSB constructs handpumps and tube-wells in villages and then hands them over to the village Panchayat to operate and maintain.
2. Group schemes which cover 5-10 villages. GWSSB is responsible for the operation and maintenance of these schemes
3. Regional schemes which cover an entire block or more. GWSSB is responsible for the operation and maintenance of these schemes.

⁵ taluka Maladar, Sanalpur, Banaskantha

As part of the third category, GWSSB and the Dutch Government initiated the Santalpur Regional Water Supply Scheme (SRWSS) in the early 1980s under the Indo-Dutch bilateral aid program. The first phase of SRWSS aimed to supply potable water through pipelines to 120,000 people in 72 villages in three blocks of Banaskantha District (Radhanpur, Santalpur, and Kankrej). The entire scheme relies on gravity, so there is no lifting or pumping. GWSSB is responsible for its operation and maintenance.

GWSSB has constructed a battery of 6 tube-wells in the Banas River, from which water is pumped out and stored in large tanks. The tanks are stored in Shiori, the *taluka* (block) headquarters of Kankrej block. From the tanks, water is distributed to the main pipeline, from which branches extend to the villages. The water in each village is stored in a cistern, and a lineman is responsible for opening the valve each day. The linemen serve as the village functionaries to GWSSB. One lineman is responsible for 2-3 villages and is sometimes a member of one of the villages. Under the scheme guidelines, he is supposed to keep the valve open for up to four hours a day. However, this is rarely adhered to; in some cases the valve is kept open for 24 hours. Each village is equipped with distribution facilities, such as standposts and troughs. The number of standposts and taps per standpost in each village is determined by the village population.

The physical works of the initial scheme were completed in 1987. During the final stage of implementation, the scheme was extended into 110 new villages in Santalpur. The new extension scheme, however, aimed to move from being only a large technical project to being a comprehensive water supply program that also addresses the socio-economic, institutional, and health aspects of water scarcity. To facilitate the new change in focus, GWSSB, established a Socio-Economic Unit, and gradually began to integrate non-governmental organizations (NGOs) into its work.

In 1988, GWSSB invited SEWA to develop and implement social and economic components to SRWSS in the Santalpur and Radhanpur Blocks of Banaskantha (see *Figure 4 : Profile of Santalpur and Radhanpur Blocks* on page 14).

Figure 4 : Profile of Santalpur and Radhanpur Blocks

	Population	% of Rural	No. Of Villages	No. Of Villages SEWA is Working In	% of Cultivable Land that is Irrigated
Santalpur	86,396	100%	73	68	.48%
Radhanpur	94,669	75%	55	47	5.30%
TOTAL	181,065		128	115	

SEWA's role was to promote the long term sustainable development of poor households in the pipeline area. Improving the stakeholders socio-economic status promised to help them reap the maximum benefits from the government scheme and contribute to the operation and maintenance of their own water resources.

As the extension scheme was a new experiment for both the Government and for SEWA, most of the approaches and methods were taken up through a process of "learning by doing". SEWA and the Foundation for Public Interest (FPI) invested substantial time collecting data on the area's land and surveying the people's lifestyles, social structures and needs. FPI is an Ahmedabad-based consultant firm that has been active in assisting SEWA. Meetings were held with local communities, including the *Sarpanch* (elected village head) and women, in a sample of 40 villages in the Santalpur and Radhanpur Blocks of Banaskantha District. SEWA also met with GWSSB to understand the technical aspects of the scheme and the Board's perceptions on the village-level water committees.

SEWA's action research targeted poor women, because women were found to hold the primary responsibility for drinking and household water at the village level. The research showed, that the overriding demand among the local women was for income-earning opportunities.



A SEWA member sews a traditional hand-embroidered skirt in her home

SEWA's experience has shown that providing women with income-earning opportunities can improve the lives of the entire family, because women spend their incomes on their family's health, nutrition, and education. So SEWA identified local skills and available natural and traditional resources that women could use to increase their income.

Today, SEWA's Banaskantha Women's Rural Development Project is facilitating income generation among poor

women through crafts, diary and fodder production, gum collection, nursery plantations, and salt farming (see *Figure 5: SEWA's Rural Development Activities, 1996* on page 16). These activities are reaching 43,000 women in 80 villages in the Santalpur and Radhanpur Blocks of Banaskantha. Each activity is implemented and managed by local-based women's producer groups. SEWA's experience has shown that such collective organization empowers individual women to fight for fair prices in the open market, combat exploitative traders, and win respect in their families and communities. The groups have been formed as either registered cooperatives or under the State Government Program titled, Development of Women and Children in Rural Areas (DWCRA). The Banaskantha DWCRA *Mahila* SEWA Association (BDMSA), a district-level federation of the village level DWCRA groups, formed in December 1992 to coordinate and implement the activities in the district and provide the necessary support to its member groups.

Figure 5 : SEWA's Rural Development Activities, 1996

Activities	No. of Villages	No. Of Women	Income Generated (Rs.)
Embroidery	20	1150	1,167,447
Patch work	9	280	
Bead work	1	50	
Nursery Plantation	7	284	258,000
Fodder Farm	2		
Milk Cooperatives		873	8,181,606
Fodder Security System	12	1500	
Gum Collection	12		~
Salt Farming	19	288	622,120
Watershed	13	7000	286,955
Savings & Credit	135	216	300,000
Child-care	13	26	~
Health Security	30	4000	~
Shakti Packet	7	2400	74,205
TOTAL	280	18,067	10,890,333

1.4 Water as a Regenerative Input Program

After the first year of action research, SEWA found that in addition to the demand for income generating activities, the need for accessible, potable water was still high in the pipeline area. SEWA's income generating activities aim at anti-desertification and eco-regeneration. They require relatively little water. Nonetheless, without a steady and accessible supply of even the minimum requirements of water, SEWA's income generating activities could not operate. Moreover, the time and energy women had to spend searching for water was directly drawing from the time they could spend in the income

generating work. Thus it became necessary for SEWA to uncover and address the reasons behind the lack of drinking water in the pipeline villages. SEWA's research uncovered two main problem areas.

The first was that the villagers had no alternative local water sources to turn to when the pipeline ran dry or the distribution facilities broke. The situation was especially severe in the tail-end villages. Since SRWSS relies solely on gravity, there is often not enough pressure for the water to reach tail-end villages once the head-end villages take their supply. Although traditional sources, such as ponds and wells, existed in many villages, most were broken or abandoned. GWSSB has supplied 19 wells in Santalpur and Radhanpur. However, 12 are borewells, whose motors constantly wear down due to the frequent electricity blackouts in the area. Replacing the motors becomes too time consuming for the government and too costly for the local communities. 3 of the wells are private, 2 are rented, and only 1 is owned by the *Gram Panchayat* (elected village government body)

The second problem area was that the scheme was not being properly managed at the village level as few communities had the awareness or capacity to operate and maintain the local water distribution facilities. After the project had been completed in 1986, GWSSB had formed *Pani Panchayats* (informal water committees) within each *Gram Panchayat* to maintain the facilities and address problems in the drinking water scheme at the local level. However, in most villages, the *Pani Panchayats* were found to be defunct. Many villagers were economically and socially constrained from participating in the *Pani Panchayats*. For example, many husbands would not allow their wives out the house, and land owners would often not respect the decisions of the poorer villagers. Other villagers did not feel it was their responsibility to maintain the scheme as they were not involved in its planning and implementation. They often blamed the Board for all the problems in the scheme rather than understanding the reasoning behind the irregular supply, the frequent breakdowns, and the delays in implementation. Finally, because the local stakeholders had not been involved in the project design, many felt the village level facilities did not meet their needs.

Significantly, however, in the few villages where the *Pani Panchayats* were active, the scheme was found to be better managed and the community more involved in the scheme's activities. Thus SEWA became interested in converting the pervading sense of a water crisis into local level awareness about water resources, water use, and water management for drinking and agricultural purposes. By integrating their income generating activities and support services with water resource management, SEWA aimed to help self-employed women pool together and manage their own resources--ultimately

ensuring their sustainable development.

These aims led to SEWA's Water as a Regenerative Input Program, which began in 1989. Based on its experiences with local producer groups, SEWA initiated local management committees to implement the Program. The program's primary objectives are to:

- augment the pipeline scheme with alternatives by revitalizing traditional water sources, such as farm ponds, village ponds, wells, and streams;
- increase local level involvement in and awareness of government schemes and village water activities; and
- build local capacity to plan, implement, and manage local water resources, especially through poor women.

Today, the program is running in 80 villages of Banaskantha District, covering a population of 100,000 (see

Figure 7 : SEWA's Activities in the Water Sector on page 25).

Since 1990, SEWA has been pressuring GWSSB to pay more attention to building the capacities of the *Pani Panchayats* (Water Committee of the *Gram Panchayat*) In November 1995, SEWA held a joint meeting with GWSSB to formulate the guidelines for the hand over of the distribution facilities from GWSSB to village *Pani Panchayats*. In 1996, the Government passed a resolution to grant the *Pani Panchayats* legal status. However, little more has been done to address this issue.

1.4.1 The Datrana Pond

The first activity assessed in this study was the agrifilm lined pond constructed under the Water as a Regenerative Input program in Datrana Village. Datrana is located at the tail-end of the pipeline scheme in the Santalpur Block of Banaskantha District. The project was initiated in February 1995, and the construction of the pond was completed in June 1995. The pond aimed to supplement the pipeline drinking water source with a local drinking water resource that the villagers could own and manage.

The Datrana pond was based on the experiences of a pilot project that was completed in 1994 in Gokantar Village, Santalpur, Banaskantha. From April 14-July 23, 1989, SEWA held 7 exposure programs to the Indian Petrochemical Corporation Limited. (IPCL) Demonstration Center in Baroda,

Gujarat. These programs gave villagers the opportunity to learn from IPCL's expertise in agrifilm treatments, such as pond lining, drip irrigation, and mulching. 247 villagers from 36 villages participated in the training. The participants included village water committees, farmers, and women. After the training programs, 42 villages from Radhanpur, and 10 villages in Santalpur agreed to adopt the pond lining. Gokantar village in Santalpur was eventually selected as a pilot village.

SEWA then contacted GWSSB, The Minor Irrigation Department and the Gujarat Ground Water Resource Corporation to provide technical inputs on the construction of ponds. However, getting the necessary advice proved to be a difficult task. The Board was reluctant to help, because it felt that an open pond would not be hygienic for drinking water use. So SEWA turned to private engineering firms. Unfortunately, the firms took the money and disappeared. The villagers were getting desperate to complete the construction before the monsoons so that the pond could harvest the water and provide a steady supply during the drought season. SEWA was also eager to begin construction as the villagers had been mobilized and were anxiously awaiting some results for all their time and hard work. Eventually, the Banaskantha *Vikas Mandal* (BVM), a local technical organization, prepared the project design and cost estimates. The Minor Irrigation Department of the government certified the plans. The *Gram Panchayat* collected the construction costs from the local community, and BDMSA oversaw the implementation and monitoring of the pond.

In the end, Gokantar's plastic lined pond proved successful. It provided potable water and decreased the pressure on the pipeline, especially in the summer. In addition, the village had been involved in the planning, implementation, and management of the pond. There was a high demand for similar ponds in other villages, so a second pond project was taken up in Datrana. The water committee of Gokantar and FPI trained a new local water committee in Datrana to construct another plastic lined pond based on Gokantar's experiences with local planning, local execution, and management by women.

Once again, BVM and FPI prepared the technical designs and cost-benefit analysis for the pond, and the Minor Irrigation Department certified the plans. The construction cost of the pond totaled Rs. 853,000. Resources were mobilized from several schemes: Rs. 50,000 came from local contributions, Rs. 200,000 from the Gujarat Government's Desert Development Program (DDP), and the rest from SEWA and the Indo-Dutch Bilateral Aid program

The pond is 21,500 square meters. In the first monsoon in 1995 the pond harvested 3 feet of rain, which lasted for 9 months. In 1996, the pond harvested four feet of rain, which lasted for 12 months. Water samples have been sent twice for bacterial testing. Both samples came back positive. Although the water is not as clean as the pipeline, it is safe for drinking. In addition, when the pipeline water is unavailable, the Committee purifies the pond water with the chlorine tablets that the Board provides for SRWSS. The Committee is also trying to convince the Board to help them attain bacterial tests every month. Recently, an outlet was built to drain the pond water into a small tank of 21,000 square meters, where it can be filtered. A hand-pump will draw the water from the tank. The villagers have not yet, however, been able to attain the pump.

The villager's response to the Datrana pond has been amazingly positive. However, as SEWA embarks on new projects, new issues will also need to be addressed, such as evaporation and a water source for drought years. Plantations around the banks of the Datrana pond are being discussed to serve as a preventive measure against evaporation and erosion on the pond bank. For new projects, however, SEWA is experimenting with smaller farm ponds under the government drought scheme to combat evaporation. Several exchange programs have been arranged with Israeli scientists to learn from their experiences in this area.

1.5 Watershed Development Program

In 1995, SEWA also took up watershed development activities under DDP. DDP was initiated by the District Rural Development Agency to address the environmental degradation and consistent poverty pervading in drought prone areas. Through micro watershed development projects, DDP aims to promote the economic development of the community that is directly or indirectly dependent on the watershed and to fight further environmental deterioration of the watershed's natural resources. In Banaskantha, SEWA has initiated the micro watershed development projects in 8 villages. Watershed activities aim to collect water from natural rain flows to use in areas that have little rain fall or no water sources.

SEWA's interest in the Government Watershed Development program emerged from it's involvement in the Aravalli Development Plan in 1987. Administrators, local people, and voluntary organizations prepared this Plan together. Part of the Plan aimed to address the deteriorating water situation and environment in North Gujarat by recharging and harvesting water from the

original surface water source in the area--the Banas River in the Aravalli Mountain Range. The Aravalli Development Plan was one of the first to recognize at the policy level the detrimental affects that the deteriorating environment has on poor local communities, especially on small, marginalized and cattle farmers. The primary goals of the Plan were to:

- involve local communities in local ecological redevelopment
- make the primary rivers in North Gujarat flow for 12 months of the year
- increase fodder and grazing land for cattle
- improve soil quality by the year 2001.

The Plan was designed to be used by financial and administrative organizations. An Aravalli Committee that includes 100 rural people was formed to follow up on the Plan. It was incorporated into the national Government's Eighth 5 Year Plan. It also became the central plan for the development of the area, and formed the foundation on which the Government created the National Watershed Development Program. It was agreed in the Aravalli Development Plan that the subsequent watershed development program must be implemented at the state, interstate, and national levels. Thus a committee was also formed to facilitate intra-state communication.

Under the Watershed Development Program, the watershed area taken up in each village must be 500 hectares. 80% of the watershed area must be covered with treatment or development activities, such as small farm ponds, checkdams, vegetative barriers and contour bunds. 80% of the projects must be implemented and managed by the local stakeholders with local technology. To ensure local participation, the activities have adopted technology that has been formed by local knowledge and material. Such local technology is cost-effective, simple, and easy to operate and maintain. The Indian Council of Agriculture Research/State Agriculture Universities has reviewed the local technology and provided suggestions for technical improvement where necessary.

SEWA is a Project Implementing Agency (PIA) for the watershed projects under DDP. It's role is to identify villages, organize village watershed committees, and build the capacity of the local committee to execute the program. SEWA's aim in the Watershed Development Program is to ensure community owned and managed water and land resources. SEWA works directly with the villagers to plan and implement village-level land and water conservation activities.

The Watershed Association meets twice a year to monitor and review the progress of the project, oversee the financial arrangements, and elect and supervise the Watershed Committee. In Banaskantha, SEWA has requested the government to recognize BDMSA as the official Watershed Association. The District Watershed Association comprises of 11-15 members (50% men, 50% women). After 4 years, it is hoped that the operation and maintenance of the activities can be handed over to the Association.

The Watershed Committee is a local organization responsible for developing a 4 year plan for the activities and identifying the people involved, attaining the technical sanction for the plans by the government, and executing the project. The Committee comprises of 10-12 members, from the user groups, self-help groups, the *Gram Panchayat*, and the Watershed Development Team. The latter is a multi-disciplinary team that provides the PIA's with guidance.

DDP provides Rs. 2,500,000 to each village through BDMSA. BDMSA also receives funding from the Employment Assurance Scheme, 50% of which has been set aside for watershed development projects in DDP districts. 10% of the construction costs must be collected from the local user groups.

1.5.1 The Piprala Checkdam

The second activity studied for this assessment is a checkdam that is to be built under DDP Watershed Development Program in Piprala Village of Santalpur Block in Banaskantha. Currently there are 30 checkdams in Santalpur and 5 ponds in Radhanpur that are used for irrigation. However, in most of the villages in the area, rain water is the only irrigation source. In some villages the *Panchayat* also auctions water from the village pond to be used for irrigation purposes; however, there is rarely enough water in the ponds to do this.

SEWA began working in Piprala in 1995. So far, BDMSA has formed the local Watershed Committee in Piprala, the Committee has completed its plan, and the community has begun the initial phases of implementation. The Committee consists of 11 members (6 men and 5 women). In addition to the checkdam, the Committee's watershed plan includes well recharging, field leveling, and nursery raising. BVM helped prepare the technical design of the checkdam, and in February 1997, the District Rural Development Agency (DRDA) granted its technical sanction to the plan.

1.6 The Water Campaign

The third activity assessed for this study was SEWA's Water Campaign. The Campaign was a state-wide effort initiated in 1995. It aimed to mobilise and organise local communities to identify, define, and address a pressing need. The unique feature of this Campaign was that it not only encouraged local women to join the movement, but it also tried to build their capacities to lead the movement and negotiate with government bodies to implement solutions. With the knowledge, capacities and support from the grass roots, SEWA also advocated for policy changes at the state and national levels. The Campaign was initiated in 7 districts (Banaskantha, Kutch, Surendranagar, Sabarkantha, Baroda, Ahmedabad, and Kheda). Local poor women led the Campaign, and men, including village leaders, participated.

After numerous surveys and meetings at the village level, the need for a steady supply of clean drinking water was identified as the most pressing by the largest number of poor women. The Campaign aimed to meet this need by building local women's capacities to assess their own drinking water sources and implement solutions to their drinking water problems. In its first year, the Campaign focused primarily on local village and some district level action. This approach ensured immediate solutions and the empowerment and participation of village women. Village leaders learned to work with different government offices to fix broken sources or build new ones, and to operate and maintain the sources at the village level (for more information on the Campaign details, see *Figure 6 : The Water Campaign, 1996* on page 24).

The Campaign involved 36,000 women in 258 villages; 17,000 were new women members, and 30 were new villages. The funding for the Campaign came from each district's individual project fund in SEWA. Most of the solutions were implemented by the local community and thus required relatively little funding. To date, Campaign expenditures have totaled Rs. 500,000.

Efforts were also made to implement solutions at the policy level through advocacy. SEWA repeatedly sent the findings of the Campaign to GWSSB, the Ministry of Water Supply and the Secretary of Water. Women's testimonies were also printed and distributed to the State Assembly. In April 1996, GWSSB agreed to involve local communities and NGOs in implementing water recharging and harvesting programs throughout the villages SEWA had identified. A special budget was also allocated for new water efforts, and a State Government Committee was formed to address water problems with NGOs; SEWA is a member of this Committee.

Figure 6 : The Water Campaign, 1996

Sources Identified	Problems Identified	No. of Districts	No. of Villages	Solutions Implemented	No. of Villages	Coordination with
Tanker	Salty water	3	105	Handpumps and taps repaired	21	Sarpanch and Panchayat
Pond	Irregular supply	3	60	Wells recharged	3	Water Committee
Borewell	Distance	4	31	New handpumps	5	TDO
Pipeline + Taps	Disease	2	100	Troughs	6	District Panchayat
Well	Worn Motors	3	36	Ponds constructed	3	DRDA
River	Broken Taps	1	15	Motors repaired or replaced	10	GWSSB
Canal	Pvt. fees from well owners	2	10	Pipeline water restored	15	
Handpump	One source for all water use					
	Quarrels					
	Broken Handpumps	2	22			
	Water logging	1	10			

Figure 7 : SEWA's Activities in the Water Sector

	Area	Collaborating Agency	Water Sector - Activities
1	Ahmedabad District (urban)	<ul style="list-style-type: none"> • Ahmedabad Municipal Corporation • UNDP • World Bank 	<ul style="list-style-type: none"> - Water and sanitation connections in slums - Drainage systems - Health awareness campaign
2	Ahmedabad District (rural)	<ul style="list-style-type: none"> • District Panchayat • <i>taluka</i> Panchayat 	<ul style="list-style-type: none"> - Augmenting water resources - Tanker supply in scarcity
3	Banaskantha District	<ul style="list-style-type: none"> • GWSSB • District Panchayat • DRDA • RNE 	<ul style="list-style-type: none"> - Activating Pani Samitis - Augmenting water sources - Water harvesting structures - National Watershed Development Programme
4.	Kheda District	<ul style="list-style-type: none"> • District Authorities 	<ul style="list-style-type: none"> - Water logging - Drainage systems - Augmenting water sources
5.	Kutch District	<ul style="list-style-type: none"> • District Authorities • DPAP • DRDA 	<ul style="list-style-type: none"> - Augmenting water sources
6.	Mehsana District	<ul style="list-style-type: none"> • GWSSB • District Authorities 	<ul style="list-style-type: none"> - Assessment of fluoride affected villages - Augmenting water sources
7.	Sabarkantha District	<ul style="list-style-type: none"> • District Authorities • GLDC 	<ul style="list-style-type: none"> - Reviving Hand pumps - Recharging wells - Watershed development
8.	Surendranagar District	<ul style="list-style-type: none"> • GWSSB • Salt Commissioner 	<ul style="list-style-type: none"> - Reviving defunct water resources
9.	Baroda District	<ul style="list-style-type: none"> • GWSSB • Local District Authorities • Resettlement Commissioner • DRDA 	<ul style="list-style-type: none"> - Reviving hand pumps - Water harvesting structures

Chapter 2 ♦ Assessment Methodology

It is SEWA's firm belief that an accurate assessment of any project must reflect the experiences and opinions of those who are most directly affected by the project. The following assessment of local water resources thus relies on the voices of local communities. The evaluation was not designed to measure institutional policies. Rather, it aims to help measure the performance of local institutions and local goals of local water resource activities. It provides a subjective assessment of performance, projects, and processes, and it highlights additional lessons and observations of the primary stakeholders of SEWA's water activities.

Such an assessment is particularly valuable in providing a cross check for the traditional, cost-benefit analyses that rely primarily on statistics and calculations made by trained "professionals". All assessments, including technical and economic ones, must be seen in an historical and cultural context. SEWA hopes the two approaches, the technical and participatory assessments, will be used together in the future to present a more complete and real picture of local water projects.

The methodology used for this assessment is detailed below. However, the tools described are not meant to serve as molds for other assessments. Participatory tools cannot be fossilised or the spirit of an open exchange of ideas will be lost. We hope the following chapter will instead serve as a useful example to draw from in tailoring future assessments to different circumstances.

2.1 The Research Team

The research team organized for this assessment consisted of SEWA's Department of Rural Development, The Foundation for Public Interest (FPI), and the SEWA Academy. The Department of Rural Development has facilitated the planning, implementation, and management of the water projects addressed in this study since they began in 1988. FPI has been the primary consultant for the projects, and SEWA's involvement in the water scheme stemmed from the initial action research conducted by FPI. The SEWA

Academy houses the research, communication, and training teams of SEWA.

Two to three members from each department were selected to form the research team for this assessment. The team members were selected based on their past experience with SEWA's water activities and participatory assessments. In total the team consisted of eight people. The responsibilities of the team included planning designing, and writing the assessment. However, additional assistance in conducting the participatory assessment exercises was drawn BDMSA and other local leaders and organizations.

2.2 The Selection of Activities

The study focused on the management approaches in three of SEWA's water resource activities. In selecting the activities, the team aimed to cover different aspects of SEWA's projects, including various water uses, different locations, and different stages of implementation. *(Please see Chapter 1 for more detailed information on the background of the selected activities).*

2.2.1 Activity #1

The first activity assessed was the Water Campaign. The Campaign was initiated in 1995 to address a widespread, pressing local need through advocacy and immediate micro solutions. After numerous surveys and meetings at the village level, the need for a steady supply of clean drinking water was identified. The Campaign aimed to meet this need by organizing at the local level and building local women's capacities to assess existing drinking water sources, to work with different government offices to fix broken sources or build new ones, and to operate and maintain the sources at the village level. Opinion building on a wide scale, the emergence of leaders at the local level, and local capacity building is essential to local organization and concrete change.

The Campaign was selected for this study to assess the extent to which SEWA has been able to improve local level leadership and management of drinking water through capacity building and advocacy. The Campaign was assessed in 7 districts that SEWA is working in to highlight SEWA's state-level approach to water resource management. As the Campaign is also relatively new, the capacity of the local leaders to assess recent activities and plan future ones was also studied.

2.2.2 Activities #2 and #3

The next two activities assessed for this study were selected to complement the more broad-based analysis of the Campaign with two detailed surveys of direct action projects. Like the Campaign, these two projects aim to address the pressing need for a steady and safe local water source that the villagers can own and manage. Both projects are being managed by a local committee of women and men from the village. To broaden the scope of the study, the two projects were selected from different villages. Both villages are in the same district and thus fall under the authority of the same District Association. The District Association is also a local level community organization that SEWA has helped build.

The first activity is a drinking water pond that was lined with agrifilm in Datrana Village in Banaskantha District. SEWA has been working in Datrana for 7 years. The Pond project was completed in 1995; SEWA spent almost 5 years (1990-1995) building local communities' capacity to organise, identify their needs, and plan the project. The pond lining was used to prevent further salinity ingress in the pond water. The local water committee was in charge of the design and construction of the pond and is now responsible for overseeing it's operation and maintenance. The pond assessment was useful in assessing the community's progress in increased awareness and capacity since SEWA began working in Datrana, the physical achievements of the local water committee, and the committee's ability to mobilize the community to maintain the pond.

The second activity is a checkdam that is to be built in Piprala Village of Banaskantha District. The checkdam aims to increase irrigation and revive local ecological assets. SEWA began working in Piprala in 1994. The local Watershed Committee received the technical sanction for the checkdam in February 1997. Thus the assessment of the checkdam was useful in studying SEWA's approach at the early stages of project implementation. The assessment focused on local-level project identification and planning capabilities for new water sources used for irrigation.

2.3 Principles

Because SEWA aims to ensure an integrated approach to water resource management, all eight principles were addressed for each of the three above-mentioned activities.

However, while the assessment exercise was designed according to the 8 principles and indicators, the team chose not to assess each principle separately. Instead the principles were mixed together into the methodology outlined below. The principles were not detailed to the participants prior to the assessment. This method left more space for the participants to talk openly about the issues that concerned them, rather than merely cover a checklist of the issues we wanted them to address. In addition, this method helped the team assess which principles were being addressed by the stakeholders and which were being ignored.

Since the principles were all assessed using the same methodology, the methodology is not outlined separately for each principle in Chapter 3.

2.4 Methodology

Part 1:

When planning the participatory assessment for this study, the team felt that it was important to reflect SEWA's ongoing attempts to promote participatory assessment skills among local stakeholders as an essential component of water resource management. SEWA's experience has shown that such assessments are extremely valuable in ensuring sustained operation and management of water resources. By building the local leaders' ability to conduct participatory assessments, project assessments are not limited to academic exercises performed by outside actors.

Thus it was decided to first draw from the local communities' observations on local water resources by integrating the assessment with on-going activities. This provided a more "natural" atmosphere for the study and helped build local assessment capacities, making it truly participatory.

For the Water Campaign, this was done primarily through conversations and small meetings in village homes and near village water sources, as was done throughout the Campaign. This method was useful in assessing the

Campaign's impact on local awareness and management capabilities regarding drinking water.

For the two village activities, the team decided to attend the regular meeting held every month by the local management committee for each activity. In Piprala Village, the team attended a planning meeting that the Village Watershed Committee held after receiving the technical sanction for the checkdam. In Datrana Village, the team attended a meeting that the Pond Committee holds regularly to discuss various issues regarding the operation and maintenance of the Pond.

In addition to learning from the local committee's observations, this technique was useful in assessing their capabilities to address all eight principles and learn how they translate their own assessments into concrete action.



Part 2:

The second method used for this study was assessment through Participatory Evaluation Writing (PEW). PEW was developed by SEWA and FPI in 1996 for a study conducted with the World Bank. The study assessed SEWA's Sukhi rehabilitation project, and was found to be extremely successful.

PEW provides a useful opportunity to bring illiterate rural people's unaltered voices into mainstream policy discussions. Once local ideas and opinions have been put into writing, they are more likely to enter project plan documents and policy papers.

Moreover, the PEW ensures individual participation and individual capacity building. Although the PEW pushes people to think in a way that might be new for them, participants said it was useful for them to learn new assessment methods that they can use in their own work, and to think about their work in a comprehensive way.

"I didn't even know that I knew so much about the water sources in my village until after I wrote it all down and drew it out today."

—Hejiben, Datrana Workshop

The PEW exercises were designed to:

1. Address those principles and indicators that were not addressed through the committee meetings and conversations, and
2. Ensure the participation of stakeholders who are not members of the management committee or are unlikely to speak in front of committee members or government functionaries.



Participant fills a PEW booklet

Short booklets were prepared for each activity. Each booklet contained 15-20 exercises, and each participating stakeholder completed one book. The exercises included mapping, Venn diagrams, fill in the blanks, drawing pie charts and bar graphs, and ranking. [see Annex 1 for examples of the exercises]. Prior to the Committee meetings, the team requested the Committee to send them a copy of the meeting agendas, so the team could design the exercises to complement the meetings and avoid repetition.

The majority of meetings, two or three people generally do all the talking, while everyone else just sits there and doesn't give their input, which I like.

The team designed the exercises to accommodate both literate and illiterate participants, high-level and low-level stakeholders. Thus the exercises were kept relatively simple with the use of pictures, large writing, and easy language. The questions were pointed to trigger the participants' thinking process. A few exercises were completed in groups to observe group dynamics and allow participants to learn from one another. However, the majority of the exercises were done independently to ensure every individual's participation. Although the majority of the participants were illiterate, the team opted for writing exercise to ensure that those who were intimidated to speak in front of their husbands or village leaders would at least write their opinions. Literate facilitators from the team assisted the illiterate participants.

The majority of meetings, two or three people generally do all the talking, while everyone else just sits there and doesn't give their input, which I like.

2.5 Location and Timing

One full-day assessment workshop was held for each activity. The team opted to hold the workshops in a neutral setting—outside the villages and the workplaces of the SEWA organizers and government officials. The neutral setting helped participants with different backgrounds and positions meet on an equal level and allow them to concentrate solely on the assessment without interference from their daily work. The three workshops were held in an outdoor nursery/restaurant called Bhageshri, located in Gandhinagar, the capital of Gujarat. Transportation to and from Bhageshri and food for the day was provided by the team to at least partially compensate for the time and income that the villagers sacrificed to participate in the assessment.



Participatory Workshop at Bageshri

In order to minimize the time wasted in transportation, the team requested the committee members of Datrana and Piprala to hold their meetings in Bhageshri prior to the assessment exercises. Thus during the first half of the day the team participated in the local meeting, and during the second half of the day the team conducted writing exercises. The exercise booklets took approximately 4 hours to complete. Since many of the villagers were participating in such exercises for the first time, the pace was kept slow.

The results of exercise books were then analyzed by the team members according to principle and stakeholder. All three workshops and both the committee meetings were video taped to complement the written assessment with visual aid.

2.6 Participants

The team aimed to ensure that an accurate cross section of all the stakeholders in the three activities participated in the assessment. The final list of participants was made by BDMSA.

The conversations and meetings for the Campaign were held in the villages with local stakeholders. Participants included women artisans,

teachers of schools and day care centers, milk cooperatives, small and marginal farmers, the *Sarpanch*, and the women volunteers who led the Campaign in their villages.

The Campaign writing workshop was held with 40 stakeholders involved in managing and implementing the Campaign. The participants consisted of four broad groups: village members, village leaders, SEWA's field staff, and SEWA organizers. All four groups participated in the Campaign at different levels. However, everyone completed the same exercise book in order to assess the various participants' understanding on a constant scale. 32 of the participants were local workers and 8 were SEWA coordinators. 100% of the participants were women, as the Campaign was run only by women.



Datrana women map their village

The selection of participants in the Datrana and Piprala meetings aimed to reflect the management structure and approach of the two activities. When planning and implementing these activities, SEWA employed both women and men, village members and government officials, to promote cooperation within the community and with existing government programs and leaders. The participants at the assessment workshops thus included the village management committees, the *Sarpanch*, the Deputy *Sarpanch*, the *Talati*

(Secretary of the *Gram Panchayat*) the school teacher, small farmers, and poor-self employed women artisans and farmers.

The Datrana Workshop had 18 participants. The majority were female (13), because women hold the primary responsibility for rural drinking water. 15 of the participants were illiterate. Significantly, however, almost everyone was involved in the pond's management. 10 were members of the Pond Committee, 5 were village leaders, and 2 were members of the *Panchayat*.

The Piprala workshop had 16 participants. 50% were male and 50% were female. 9 of the participants were literate. 13 of the participants were agricultural laborers or farmers as they are the most direct beneficiaries of the checkdam. The village teacher was also present. Again most were part of the village watershed community. 8 were members of user groups, 2 were members of self-help groups, and 4 were members of the Watershed Committee.

2.7 Feedback—Success and Constraints

The participant's feedback from all three meetings was positive. Significantly, several participants said the exercises were useful in helping them organize their own thoughts and knowledge in a way they could share with others. Others enjoyed the opportunity to speak and discuss on an equal playing field with different actors in the project. Every participant was eager to share his or her experiences and be heard. A few felt they could now conduct similar exercises themselves in their villages.

After the workshops, the team held a workshop on March 11, in which the assessment methodology and results were presented to the GWSSB, the Additional Chief Secretary of Rural Development, and the Dutch Embassy. Other participants included representatives from the World Bank and the Gandhi Labor Institute, and private consultants. The presentation workshop aimed to include the input of stakeholders at higher levels in the assessment. Again the participants were positive. They felt the method would be useful in government sector programs, and in increasing policy ideas and investments. The Government made concrete pledges to utilize participatory methods in their work, and the Gujarat *Jalseva* Training Institute (GJTI), under GWSSB, proposed a joint training plan with SEWA.

However, after the meetings, the team also identified some limitations of the workshops. The biggest problem was found to be the number and quality of the facilitators. Because the number of illiterate participants was so high, the team had to also depend on the literate participants to help their illiterate neighbors complete the booklets. At times the literate participants found it difficult to illicit answers from participants who could not understand the questions, were too shy to speak, or were not too involved in the village water activities. Thus some began to dictate answers or fill in the booklets as they saw fit. The team tried to minimize these minor difficulties by helping each other and consistently checking the participants to ensure that they were completing the exercises correctly and independently. However, it was agreed that in the future a larger number of facilitators and an orientation for all facilitators would be useful.

Chapter 3 ♦ Water Resource Management Principles Addressed

Introduction

One of the most important findings in this assessment with regard to the 8 principles was that the principles are co-dependent, and must thus be addressed simultaneously. For the purposes of this study, the principles have been detailed individually. However, we would like to emphasize that SEWA's approach in its local water resource projects is to integrate them. SEWA's experience has shown that one cannot be properly addressed without addressing the other.

All 8 principles are an integral part of SEWA's activities. However, SEWA's most important goal in addressing Principles 1-3 and Principle 8 (water resources and catchment protection, equal allocation, efficient water use, and addressing the economic and social value of water) is to build the local capacity to address them on their own according to their own needs and circumstances. Principles 4-7 are not viewed as an end, but rather as a mandatory means to Sustainability and local ownership of local resources. The key to ensuring sustained local management is to build local management capacities and skills so that local communities can work directly with outside parties. The key to capacity building at the local level is to involve the local communities in every step of the project cycle. Finally in order to ensure the participation of all the relevant stakeholders, SEWA has found that water resource management must be done through the leadership of poor women. Projects are initiated based on the needs identified by the local people; local management committees are built to eventually take over the operation and maintenance of the project; and women, who hold the primary responsibility for rural water use, are empowered to control their own resources.

In addition to being among the most essential components of SEWA's approach to water resource management, Principles 4-7 represent the biggest challenges SEWA comes across in its work. Meeting these principles often means confronting age old social norms and questioning ingrained prejudices.

In a land governed by economic, caste, and gender hierarchies doing this has meant not only taking a long and tiring path but often times a path that has never before been tread. It is important to understand that a short term assessment, such as this, can never do full justice to the complexity, the politics, and the struggle that come hand in hand with any fight to change local power relations.

In any case, we have outlined below SEWA's approach and aims for each principle in the "Background" section; the results of these approaches based on the participatory assessment in the "Results" section; and the broader picture along with the constraints in the "Lessons Learned" section. The approaches, results, and constraints, however, vary with each project and area. Since it is not possible to isolate one principle from another, there are some references to other principles within each section.

Principle 1: Water Resource And Catchment Protection Are Essential

3.1.1 Principle 1: Background

Local communities in Banaskantha have been trying to combat the deserts with traditional water harvesting sources since time immemorial. For 8-10 months of the year, the desert yields no rains; successive droughts almost every three years since the early 1960s have deprived millions of even the monsoon rains. Moreover, the tail-end villages located on the edge of the deserts, monsoons mean floods, as the otherwise dry river beds overflow into the low land desert plains. Ground water in Banaskantha is also scarce and often saline. Finally, the water tanks supplied by GWSSB are irregular and usually low in quality. These harsh conditions have forced villagers to spend 6-8 months each year migrating in search of income, water and food. During the remaining months, they try to harvest as much rain and ground water as they can through traditional methods, such as village ponds, dug wells and step wells.

As part of the action research SEWA and FPI conducted when they first began working in Banaskantha, water inventories were taken for each village. The inventories were based on the local communities' inputs on the supply and demand of drinking water in their villages. These inventories revealed that several factors in recent years had changed catchment and water flow and thus increased the occurrence of droughts and floods in the past 3 decades.

An increased number of deep tube wells among rich farmers was decreasing the ground water tables. Therefore, the dug wells and step wells were not producing ample quantities of water, especially for the poor. In addition, the increased use of fertilizer was contaminating surface and ground water. The construction of roads and scarcity work, such as earth digging in times of drought, had changed land contours, which altered water flow. Finally changing agricultural patterns also affected water catchment as the rate of deforestation increased and local communities turned to wastelands for nursery plantations. While traditional structures were already in place, SEWA found most of them to be badly maintained or technically wanting in their ability to adjust to the changes in the surrounding environment.

Through the village water inventories, the villagers themselves identified the need for improved water resource and catchment protection activities.



Water's life to the marginal rural poor in Banaskantha is as important to them as human life. The two can hardly be separated. Thus threats to their water resources are direct threats to their lives. Resource protection is, therefore, a permanent priority.

In addition to the environmental and development changes affecting the village water supply, villagers also pointed out that the pipeline often ran dry or broke down. Many women complained that the distribution facilities were too far from their homes. Finally the increasing costs of water treatment was hindering the poor from taking action. So the villagers called on SEWA to help them augment the pipeline water by reviving their traditional water sources.

As a result of the villagers' voices, SEWA has initiated several water resource and catchment activities over the past 8 years. Each activity is planned, implemented, and managed by the local community; SEWA serves as a facilitator throughout the process. Below are a few examples of SEWA's current activities in this area.

1. **Bunds for waste water catchment**—Waste water from wells and taps is diverted by a mud bund to flow into a filter tank. The clean water is then thrown into an open well. The increased water pressure in the well forces blocked underground streams to open.
2. **Pipe to catch excess field water**—The excess water used for irrigation is directed through a filter tank and down a pipe that is inserted into the ground. Again, the method helps increase water tables and villagers can then use an ordinary borewell to extract the water.
3. **Farm ponds**—For approximately every 10 hectares of irrigated land, SEWA tries to use 1 hectare to collect the run off water to use later for irrigation purposes. A mud bund is built around the pond to stop the water flow and make it stagnant, so the mud can settle to the bottom. The overflow water at the top is then collected in the pond.
4. **Hidden dams**—When the river dries before the monsoons, a 20 foot deep plastic wall is inserted into the river bed. Once the monsoons come and

the underground stream begin to flow again, the dam diverts the water into branches that extend into the villages. Open wells are then built above the branches to extract the water.

The national government also recognised the need for increased attention to water resource and catchment protection at the regional level in 1987. The Aravalli Development Plan was initiated to reach Northern Gujarat by recharging and harvesting water from the Banas River. The Plan was integrated into the Government's Eighth Five Year Plan. SEWA and FPI were actively involved in its design, and submitted it to Banaskantha's District Collector in 1991-92. Many of SEWA's current water activities stem from this Plan, which aims to catch surface water from the Banas River and ultimately increase ground water tables and improve the pipeline scheme.

In 1995, the Government took one step further and identified the need for water catchment at the village level through the Watershed Development Plan. SEWA's activities under this Plan aim to harvest water in local watersheds through checkdams, ponds, and borewells. Ground water is also being recharged through percolation tanks, bunding, vegetative barriers, and nursery plantations. These activities have been the first of its kind in the area to address water resource and catchment protection.

Recently, GWSSB and the Dutch missions have also recommended that the Government prevent any more sanctions for borewells within a 5 km radius of the pipeline scheme. However, the recommendation has not yet been accepted.

3.1.2 Principle 1: Assessment Results

In all three workshops, the participants pointed to the importance of water resource protection, catchment, and enhancement as irrigation increases, water tables decrease, land degradation worsens, and ground water salinity increases. However, the participants also pointed out that the extreme water scarcity in their areas has forced them to recognize this need for years. What is now becoming increasingly more clear, however, is the additional need to link local water resource protection to local protection capabilities and local circumstances.

Villagers' experiences with the Government's large-scale regional pipeline scheme has shown them that they cannot depend solely on highly technical projects managed by others to attain drinking water. The

participants wrote that it was their active involvement in SEWA's local protection activities that helped increase their capacity to translate their awareness into concrete and effective action. SEWA's activities aim to build on existing local resources and sources. According to the written evaluations, the most important part of SEWA's protection activities in this regard was:

1. Building on existing local knowledge, and
2. Initiating activities according to the locally voiced needs.

Local water resource and catchment protection, therefore, not only needs to be recognized and addressed, but also needs to follow local practices. Only then can local water resources and local capabilities simultaneously improve.

Workshop #1

In the Water Campaign Workshop, 38 of the 40 participants said that the most important impact the Campaign had on them was increasing their awareness on the importance of water. Unlike most social and economic campaigns at the national level, The Water Campaign was an advocacy exercise at the village level. It addressed an issue that was important to the locals; it utilised language that was familiar to the locals; and it built local leaders to voice the issues. For these reasons, it was able to reach so many women.

Twenty-six participants also pointed out that many local people understood the importance of water resource protection when the Campaign began, but they lacked the knowledge and the capacity to revive the water resources on their own. When the Campaign was initiated, the locals identified the need to learn how to revive and fix *existing* village sources. Pipeline water was irregular, and many villagers preferred a closer source. Existing local sources included hand-pumps, ponds, and borewells, and pipeline distribution facilities, such as taps and tanks. However, most were broken, dry, or abandoned

The Campaign, not only instilled the importance and the capacity to fix broken sources, but also the importance and capacity to take preventive care. Local women leaders are held responsible for monitoring local water resources and contacting relevant government officials as new problems arise. These are important skills. However, in next year's Campaign SEWA should also increase villagers' technical capacities to address some problems on their own, so villagers do not have to suffer due to government bureaucratic delays.

Workshop #2

In the Datrana Workshop, the participants demonstrated a very clear and accurate understanding as to the importance and the reasons behind the pond project. This awareness was reflective of SEWA's approach in initiating water catchment activities based on the locally voiced needs. When the local needs are addressed, the locals are more interested in getting involved in the project; only if the locals are involved in the project, can their capacity to implement and manage it grow.

The participants said the focus in the pond project was to protect water catchment at the village level. They needed a local water source that could complement the pipeline and provide a steady supply of accessible drinking water. During the summer, the pipeline ran dry for up to 15 days at a time. In addition, the taps and tanks often broke down and were left unattended for months. Wells were either dry or salty. The women identified the need to create a source restricted to drinking water. The existing local sources were used for all water needs and thus increased women's drudgery as they had to separate the water into its different uses.

The participants said in the end they chose to line an existing pond with plastic culture for three main reasons.

1. The location.

Women said it was easy to fetch water from the pond, because it was so close to their homes. Many said that now they can even send their children or husbands to help fetch the water.

2. The issue of salinity.

Because of the increasing salinity of the soil, the pond's water only remained potable for 2 to 3 months. However, with the plastic lining, the villagers say the pond water remains fresh for 8-10 months.

3. Women's call for a local drinking water source.

Participants said that because the pond is limited to drinking water purposes, the water remains clean and water related diseases have decreased. In addition, women no longer have to waste time trying to find drinking water by walking far distances in search of a new source or filtering dirty water from a nearby source used for bathing or sanitation.

In contrast to their high level of awareness on the importance of the pond, the participants did not reveal a very high understanding of the recent protection activities that SEWA has recently tried to initiate for the pond. For example, SEWA has suggested planting a plantation of trees around the pond. This plantation would act as a wind barrier to prevent further evaporation; it would also protect the pond banks from erosion. However, almost 50% of the participants said that the primary purpose of the plantation was aesthetic. Currently, almost 65% of the problems SEWA is facing with its two village ponds (in Gokantar and Datrana) are due to evaporation. Israeli consultants have suggested that SEWA follow their model of deeper ponds with smaller surface areas. However, as the ground is saline in Banaskantha, SEWA has been unable to build very deep village ponds. SEWA is also looking into building open wells around the pond that can tap the pond water that has percolated down.

Finally, the Pond Committee has created rules to ensure the proper use of the pond water and a maintenance fund to help protect the pond. However, the Committee's capacities to collect the fund and enforce the rules need to improve (see Principle 4 for more information).

Workshop #3

The Piprala workshop reflected a similar outcome to the Datrana workshop in terms of the high level of local awareness and interest in water catchment. The primary difference, however, was that in Piprala, the villagers have chosen to build on their existing knowledge about their land with new knowledge on modern water harvesting systems. Thus the participants said their focus was to improve water catchment at the village level and adhere to the Government's Watershed Development program. They agreed to first help build a local checkdam to catch rain water because:

1. It's benefits promised to have the widest outreach
2. It was economical, and
3. It would use available resources and skills.

The participants also pointed to the strategic location of their village on the edge of the desert as ideal for a checkdam to harvest the greatest quantity of water. During the rainy season, a large volume of water flows through the village from a tributary of the Banas River and empties into the desert. Most of the water is lost to the sands, and often times the desert floods from excess rains. The members of the Watershed Committee and the user groups all

wrote that catching this water before it reaches the desert would help them solve their problems of water scarcity in agriculture. Again, because the water catchment project was based on their needs, the participants were clearly interested and involved in the project.

To protect the dam, a mud bund with a vegetative cover will be planted around the checkdam to prevent erosion and serve as a wind barrier. The plantation will be limited to shrubs with a limited root system that will not destroy the dam.

3.1.3 Principle 1: Lessons Learned

Local water resource and catchment protection and enhancement, in addition to other measures like pipelines, are essential in desert areas because people's lives depend on it. For years, those who have been struggling to survive the effects of mistreated water resources have not only identified it as a need, but have also initiated several activities to reverse the situation. These activities aim to meet local needs; they are congruent with local customs and practices; they utilize technologies and resources that locals understand and have access to; and they maximize on the natural surroundings.

They also have room for improvement. In particular, increased emphasis will have to be placed on protecting the local sources that have been created. Community organisations should increase pressure on the Government to restrict the number of tubewells and the amount of groundwater drawn. Restrictions can be enforced through laws, licenses, fees and consistent monitoring. In addition, water programs should link to wasteland development programs. Plantations can decrease erosion, which can safeguard against changes in water flow and flooding. Finally, local awareness on the importance of protecting their own sources will have to increase.

SEWA's experience has shown that working with the local communities to revive and improve their traditional water resource and catchment protection activities ensures their active involvement in the implementation of the project and their long term interest in maintaining the project. Adding modern knowledge to traditional knowledge can ultimately help even the poorest communities adjust to our rapidly changing environment.

Principle 2: Adequate Water Allocation Needs To Be Agreed Upon Between Stakeholders Within A National Framework

3.2.1 Principle 2: Background

SEWA's discussions on water allocation are two-fold. The first is allocation between three water use sectors—namely industry, agriculture, and drinking. The second addresses water allocation among the individual members of a community.

In the post independence era of the 1950s and 1960s, the Indian government placed a heavy emphasis on rapid industrialization. Consequently, water for industrial use was given priority over water for agricultural or drinking purposes. Once again, it was the poor, marginal farmers that suffered the most from these government policies. In the 1960s and 1970s, the Government's emphasis shifted to increased agriculture and irrigation. These policies caused many rich farmers to overdraw good groundwater through deep tube-wells for irrigation purposes. Poor farmers and the landless did not enjoy either the money or the power to tap distant ground water sources or afford a tube-well.

For years SEWA and other NGOs throughout the nation fought to fix this imbalance in the sectoral allocation of water. Finally, in June 1996, a small victory was made when the Chief Minister of Gujarat announced that drinking water would become the priority sector. The tariff on industrial water use was increased by 7 *paisa*, and the earlier law against pumping water for drinking purposes from irrigation reservoirs was repealed. Now up to 40% of the water collected by dams can be used for drinking purposes.

With regard to individual allocation, the drinking water pipeline scheme in Banaskantha, Gujarat aims to extend an adequate water supply to every member of the pipeline villages. Twice a year, a group of technicians hired by the Dutch Embassy visit the pipeline villages to assure that proper monitoring and allocation is being made. While the mission reports were returning with positive results, however, SEWA's collective village water inventories

indicated that adequate water allocation was far from being realized. Upon closer study, SEWA found that shortly before the missions arrived, the pipeline water supply would be turned on to run smoothly; shortly after the missions left, the pipeline would once again run dry.

So SEWA and FPI set up an alternative monitoring system to complement the mission reports. FPI's water team checked the system at odd intervals throughout the year, and unlike the Dutch missions, FPI did not announce its visits in advance. In addition, the alternative system relied primarily on interviews with the local people, and less on the highly technical, computerized techniques that the missions used. While both systems are useful, SEWA's experience has been that the local data from the people not only reflect a clearer picture of the situation at the lowest levels, but also provide the people with accessible data with which they can fight to change the system.

The villagers' accounts revealed that not only was the pipeline water not reaching much of the rural poor, but the allocation system itself did not match the villages' lifestyles. Under the pipeline system, the government calculated water needs per head. Each person was to be allocated 45 liters per day. However, such estimates fail to account for real life fluctuations in need. For example, what happens when someone falls ill, or a woman is delivering a baby, or a family must pay for their daughter's wedding?

*"I've almost lost all the hair on my head from worrying about how I'm going to provide a glass of water to the guests at my daughter's wedding. There has been no water in the taps for the past 17 days."
—Sharifaben of Gokanur Village*

Too often, formal allocation systems assume that local allocation systems have never existed prior to the contemporary attempts to address the issue. For example, there has been little research on traditional water rights.

3.2.2 Principle 2: Assessment Results

All three workshops revealed that adequate allocation was a priority concern of the local project managers. This was reflective of the level at which the local Campaign leaders and the Datrana and Piprala Committee members sit in the stakeholder hierarchy--at the bottom. The project managers

comprise primarily of people who are ignored and suffer most in the conventional, mainstream water allocation systems. Thus, restructuring water allocation systems to meet their requirements is their priority; SEWA's priority is to build their capacity to do so.

The participants said that they must decide which sector should get priority in water use planning and how each member of the community will be guaranteed his or her share. As a result of their involvement in allocation at the community level, the participants in all three workshops indicated a strong awareness and involvement in the local allocation systems they had set up for the local water resources. Because they had a substantial say in designing the allocation system, the participants also expressed a high level of satisfaction with the allocation.

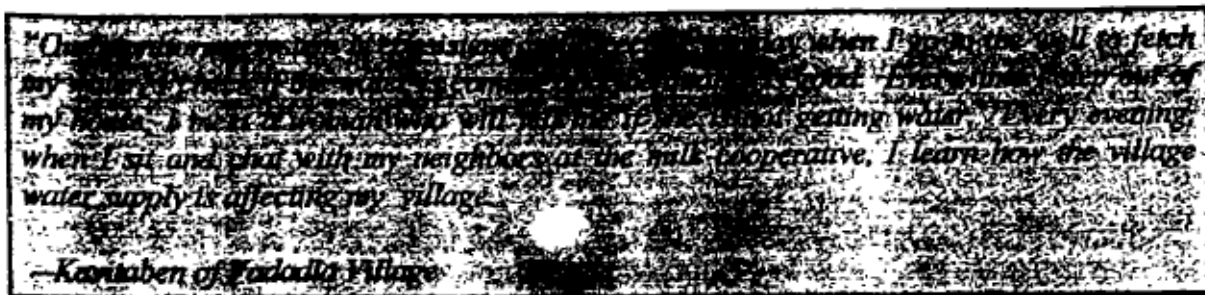
Workshop #1

In the Water Campaign workshop, 40 of the 40 participants wrote that the primary aim of the Campaign was to attain a regular and adequate supply of drinking water for every villager. The Campaign was launched to meet this need and this need was identified by holding *gram sabhas* in each village. For SEWA the *gram sabhas* were useful in identifying the villagers' most pressing need and the people who would be willing and interested to invest their time and energy in the Campaign. For the villagers, the *gram sabhas* gave those suffering the most from a lack of adequate water supply the chance to speak out, organize and take action. As a result, the solutions implemented through the Campaign targeted the drinking water sector and those people who were most in need of a clean and steady supply of drinking water. It also empowered those at the bottom to ensure that an adequate water supply reaches their homes.

In addition, to ensuring a steady and equal water supply to all village level stakeholders, the Campaign built a local monitoring system through local women leaders. The leaders are selected by the villagers themselves. These leaders serve as liaisons between the villagers and SEWA. The participants said that the villagers prefer to report problems to the local leaders rather than to outside officials because:

1. The local leaders are familiar with the villagers and the village lifestyles, which helps villagers build a close and open relationship with the leaders.
2. The local leaders live in the village, so they are more accessible to the villagers, and they can monitor the system on a daily basis.

3. The local leaders have a direct interest in the local water sources and thus follow up on water supply problems more efficiently than government officials.



Workshop #2

As in the Water Campaign workshop, 100% of the participants in the Datrana workshop wrote that they chose to make a pond, because their biggest need was for drinking water. Again, because all the villagers were involved in the earliest stages of the project cycle, the pond was built to ensure equal access for every village member. Those who had the least access to other water sources could voice their needs and suggestions to change their dire situations. Sixteen of the 18 participants said that the most important criteria in the selection of the pond site was ensuring equal access and its proximity to the village. They also wrote that the biggest benefit of the pond has been the equal distribution of water the village now enjoys. Every member of the village uses the pond water, including small, medium, and large farmers, village leaders, the village school, the day care center, and the pond committee. Some participants said that even neighboring villages sometime use the water.

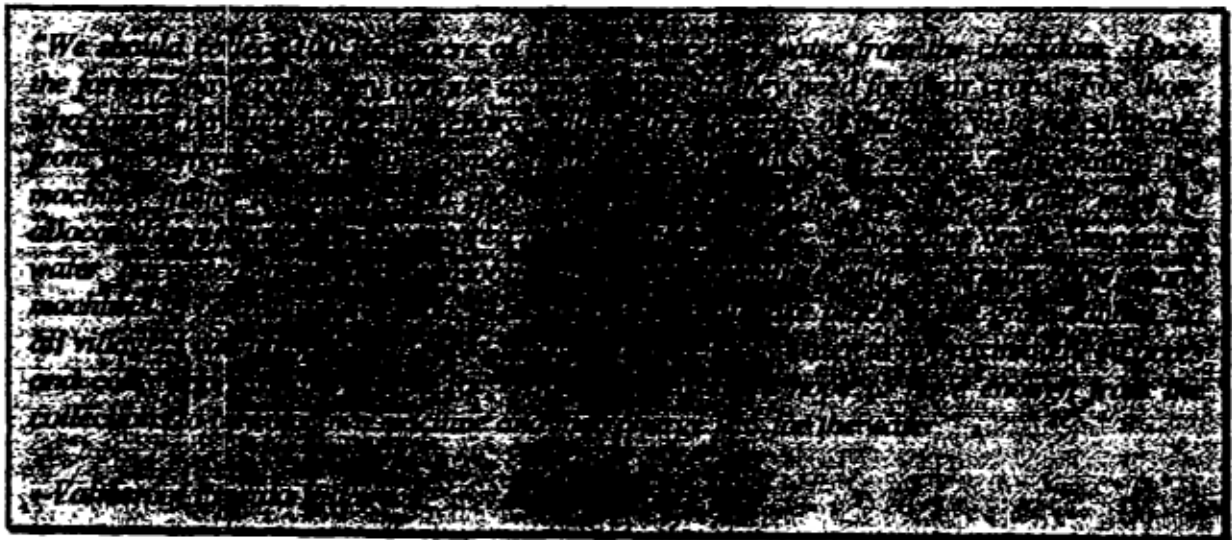
As in the Campaign, the local monitoring system for equal allocation in Datrana is local leadership. The Pond Committee is responsible for ensuring equal use of the pond water. Distribution has not been calculated per head per day. Instead, their distribution system is flexible enough to meet the changing needs of different stakeholders. The system depends on the stakeholders' involvement in the management of the pond and their sense of ownership of the pond. If they feel they are being denied equal access to the pond water, they can raise the issue in the Committee meeting.

Workshop #3

The Piprala workshop revealed the villagers' interest in ensuring equal allocation measures as early as the planning stage. 13 of the 16 participants wrote that the biggest benefit they expect from the checkdam is a decrease in conflicts over water between the villagers.



During the Committee meeting, the Committee discussed how water will be allocated to the farmers. Not only did they indicate a high level of awareness and interest in the project, but also a high capacity to tackle the complicated issues raised in ensuring adequate water allocation among various stakeholders. After a lengthy discussion, where everyone raised points that concerned themselves, the committee agreed upon the following initial plan.



3.2.3 Principle 2: Lessons Learned

SEWA's experience has been that adequate allocation between sectors and individuals not only needs to be agreed upon between stakeholders, but must also be monitored by the stakeholders and remain flexible enough to meet the changing needs of the stakeholders.

When all stakeholders are involved in the project, each one can ensure that it meets their water needs. When the stakeholders monitor their own water resources, each one can ensure that their water needs are consistently being met. Finally, when the stakeholders own their own water resources, they can adjust the allocation system to meet their daily needs.

Although formal allocation systems may be more technical and precise, local monitoring systems might be more pragmatic and useful for ensuring allocation at the lowest levels.

Principle 3: Efficient Water Use Is Essential And Often An Important Water Source

3.3.1 Principle 3: Background

The primary problem in SEWA's project areas is that there is no water. People's very lives depend on the most efficient use of the little water that is available. Therefore, when SEWA first began its water activities, it found that very few villagers were wasting water or identifying it as a current problem. Water reuse was common. For example, water used for cooking or bathing is then used to water a plantation; water used to wash clothes is then used to wash the utensils; in many villages, the *Panchayat* was auctioning excess drinking water for agricultural purposes.

"Every drop of water has more value to us than a block of gold. We don't waste it, because we have none to waste."

—Debaibhai, Datrana

In addition, many of SEWA's activities aim to tap existing water resources and harvest and recycle the water (see Principle 1 for more information).

However, maintaining efficient water use once new local water sources and the pipeline increase the water supply seems to be an increasing need. Ensuring efficient water use at the local level is one of the primary responsibilities of the local management committees. But, the committees currently lack the knowledge and awareness they need to properly address this principle when water supply is adequate. According to BDMSA's Water Team, the pipeline facilities currently have a 10% chance of leakage, but they do not know the exact quantity of leaks.

3.3.2 Principle 3: Results of the Assessment

The workshops revealed a high level of awareness, especially among the local managers, on the importance of efficient water use. However, it is

not yet clear that this awareness is translating into practice at the village level.

Workshop #1

In the Campaign workshop, 34 of the 40 participants said increasing awareness on the importance of water and campaigning directly increased efficient water use. However, while almost every participant said that their own families were wasting less water, more than half said their neighbors were still wasting. This leads us to question the participants' ability to assess or willingness to admit their own level of wastage. In addition, only 2 participants said that in next year's Campaign they would like to see increased training on advanced methods of efficient water use.

This apparent lack of interest in learning more about efficient water use may be reflective of the fact that water efficiency is not yet viewed as a potential water source. Rather it is seen primarily as a survival mechanism in times of scarcity; thus the priority is to reverse the scarcity and increase water supply for oneself.

Workshop #2

Similarly, in the Datrana workshop, almost all the participants said that their own animals were not drinking from or bathing in the pond, but that their neighbors' animals were. To address this issue, the pond committee has recently employed a caretaker to take charge of ensuring the proper and efficient use of the pond water. However, the fact that some villagers' are still misusing the pond water, by bathing in it, washing their dishes in it, or allowing their animals to drink from it, makes us question the caretakers' abilities.

Workshop #3

In the Piprala workshop, the participants did call for increased training in the most efficient use of the checkdam's water. Many farmers have already purchased pipelines and motors to connect nearby farms with the water from the checkdam.

"Once you see the stack of pipes I have built for the checkdam, you will understand how important it is to us that every drop of water is used for our lands and not one is wasted."

--Parmarbhai, Piprala

The interest in efficient water use in Piprala can be largely attributed to the Watershed Guidelines, which require a local payment system for the use of the checkdam's water. Once water use becomes a variable in individual cost

benefit analyses, efficient water use seems to become more of a priority, even when an adequate water supply is available.

However, during the Piprala committee meeting, participants had suggested charging per acre of land, rather than per volume of water used. While this system will help ensure that large land owners incur greater costs than small and marginal farmers, it poses an obvious problem for efficient water use. Introducing a payment per volume of water can ensure that both small and large farmers use water more efficiently.

3.3.3 Principle 3: Lessons Learned

Because of the dire water scarcity in Banaskantha, people have been striving for efficient water use long before either the government or SEWA entered the area. The luxury of water wastage is hardly an option for desert communities. Thus, to date, SEWA has not placed much emphasis on increasing village awareness and capacities on efficient water use.

However, it is questionable whether or not people will continue to understand the importance of efficient water use once there is a steady and adequate water supply. Therefore, the need for more attention on efficient water use in SEWA's work is increasing. With regard to water for irrigation purposes, a water tax seems to increase the interest in efficient water use. Agriculture is seen as a livelihood, and can thus be subject to regular cost-benefit analyses. However, drinking water is seen by most local communities as an inalienable right. Most people do not yet feel it is "fair" to charge for drinking water. Thus a different approach might have to be taken to increase local awareness on usefulness of efficiency in increasing water supply. Local management committees are addressing this issue; however, increased attention will have to be paid in following up on the plans.

Principle 4: Management Needs To Be Taken Care Of At The Lowest Appropriate Level.

3.4.1 Principle 4: Background

The basis of SEWA's work is organizing local people to take over management at the lowest levels through self-owned, self-managed organizations. First, every SEWA member joins the SEWA Union, so that all are a part of a single, organized movement. The next step is organizing to take over their own local projects. Since SEWA began working in Banaskantha, it's aim has been to organize community members into organizations that can take over the management of their own local development projects. These local managers are usually women who are vocal, who are committed to working for their community, and who understand and are sensitive to the area and it's peoples. Education level is not a criteria in leadership selection. Although there is no formal election system, the villagers choose the leaders during open village meetings, where everyone is allowed to speak. They can also choose to elect a new leader if they feel the old one is not meeting their needs. These decisions are made by a majority vote among the villagers, and input from BDMSA and SEWA. SEWA also works with the leaders to provide both on the job training and formal classroom training to help build their capacities to :

- organize and mobilize themselves and their communities;
- establish linkages with Government programs;
- manage financial matters, such as book keeping, accounts, and banking;
- plan, write reports, and present ideas; and
- market local products.

At present local managers have been built at the district level, the project level, and at the village level. At the district level is BDMSA. The Association staff are full time workers, who divide their time between the field, the district office, and the SEWA head office in Ahmedabad. Building BDMSA's capacity to grow and become independent is of course a long process. Within the 5 years that BDMSA has been existing, however, it has taken charge of managing most of the administrative tasks of the Banaskantha

projects, such as accounting and book-keeping. It is also active in organizing local communities and overseeing the project specific management organizations at the village level.

At the village level, individual committees exist to manage the day to day operations of the projects. These committees comprise of local villagers and one or two BDMSA members. These committees are also actively involved in the planning and maintenance of the projects. Each project has a separate committee, because the activities have different needs with different accounts and links with different government bodies. However, oftentimes the committee members overlap, so they can share experiences and ideas between activities.

Finally, local women leaders (or *agevans*) in each village serve as liaisons between the villagers and BDMSA and SEWA. The *agevans* are self employed women who live in the village and are direct beneficiaries and users of SEWA's projects. In addition many are also members of the local management committees or SEWA's Executive Board.

Each leader's capacity is built to meet her communities' needs. SEWA's ultimate goal is to build the capacity of these local managers to be independent. Thus SEWA works to have them recognized by the formal governing bodies. BDMSA is a Governing body of the District Rural Development Association. It is also a member of the advisory committee of the Government DWCRA and TRYSEM (Training of Rural Youth for Self Employment) programs and a member of the Drought Relief Coordination Committee. Based on the advocacy work SEWA and BDMSA did at the policy level during the Water Campaign, a general resolution was passed in April 1996, making village level management committees mandatory in rural water projects.

By building women village leaders, local organizations, and links with local government bodies at the village and block levels, SEWA tries to ensure that management is taken care of and controlled at the lowest levels.

3.4.2 Principle 4: Results of the Assessment

The participants in all three workshops pointed to the importance and effectiveness of local level management in ensuring local ownership and sustainability of local water resources. However, the workshops also reflected that building detailed management systems takes time and needs substantial

management inputs. In particular, increased emphasis will now have to be placed on building maintenance capacities.

Workshop #1

One of the primary aims of the Water Campaign was to build local leaders who could implement solutions to local water problems and then manage the solutions thereafter. During the workshop, the participants outlined the Campaign steps that they identified as being most important in building the local leader's capacities (please refer to *Figure 8: Building Leadership Through the Water Campaign* on page 59). As the diagram depicts, SEWA acted as a facilitator throughout the Campaign; however, the local leaders were involved in every step and ultimately responsible for the implementation of the solutions.

The center line depicts SEWA's general management structure, with a constant exchange of ideas and people between the SEWA head office, the district field offices, and the villages. Together managers at each level (coordinators in Ahmedabad, the field staff, and the village leaders) comprise SEWA's management.

STEP 1: When the Campaign was initiated, SEWA held *gram sabhas* in each village to identify their specific water problems. During the *gram sabhas*, SEWA explained the Campaign to the villagers and identified which villages would be interested in working on the Campaign. The participants felt this step was important in helping SEWA develop a relationship with the villagers and giving SEWA organizers a chance to see for themselves the village environment.

STEP 2: Next, those villagers who were interested in joining the Campaign, organized themselves and selected their leaders. The participants felt this step was important in showing local leaders how to organize and mobilize their communities.

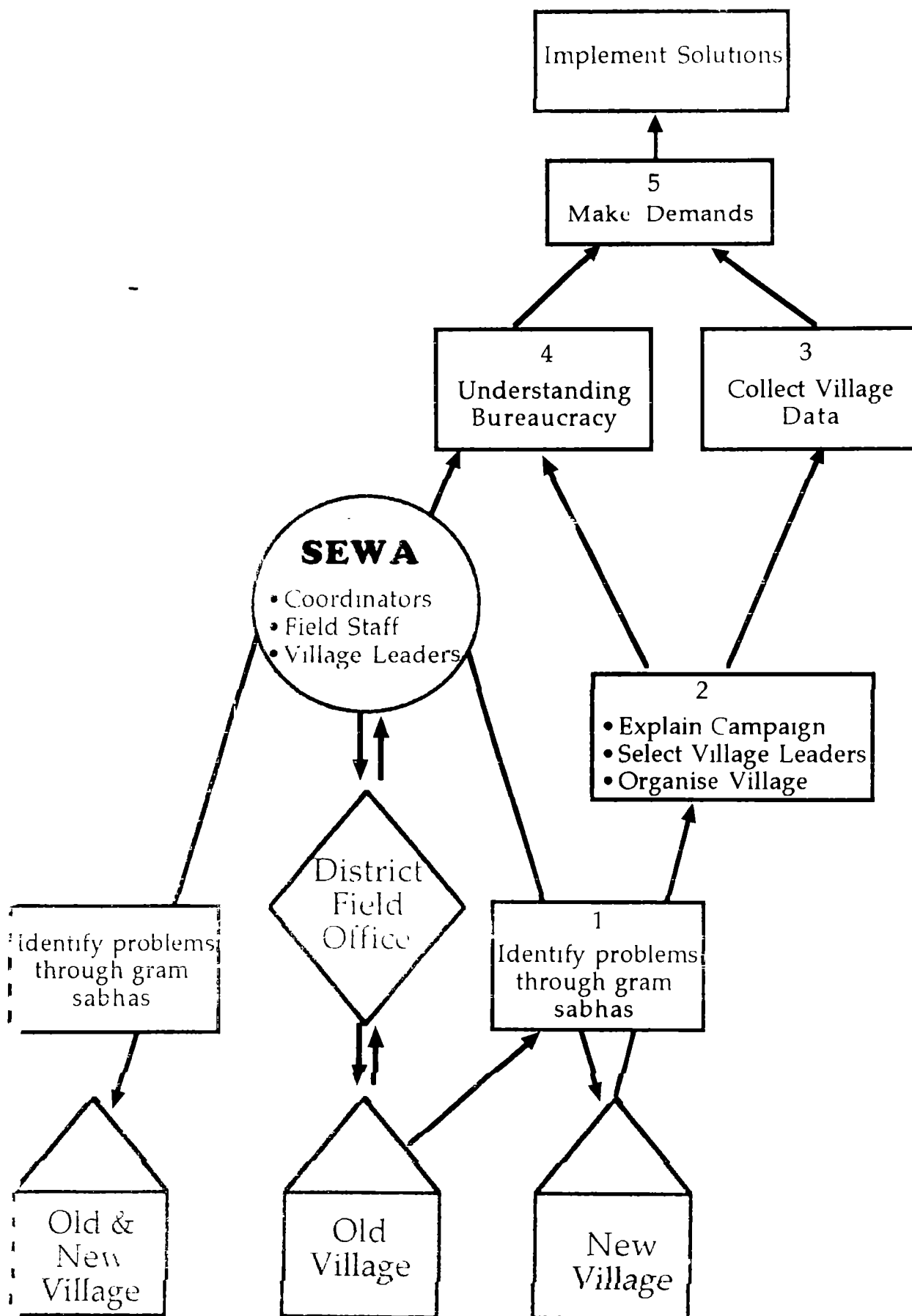
STEP 3: The local leaders and Campaign volunteers from the village then collected concrete data on the village water quality, water flow, and water sources. This data was essential when making demands to higher officials. The participants said that this step increased their own understanding and awareness of the pipeline scheme and the village water situation. Leaders said that they learned to collect, organize, and record data for the first time.

STEP 4: At the same time, SEWA worked with the local leaders to understand the government bureaucracy, so that they knew which office to

confront with which problem. They worked with the government at the block, *taluka*, and district level. The participants said this step helped demystify the government for the villagers. Many local leaders visited government offices for the first time. Through the repeated visits, they gained confidence in making their demands directly to higher officials.

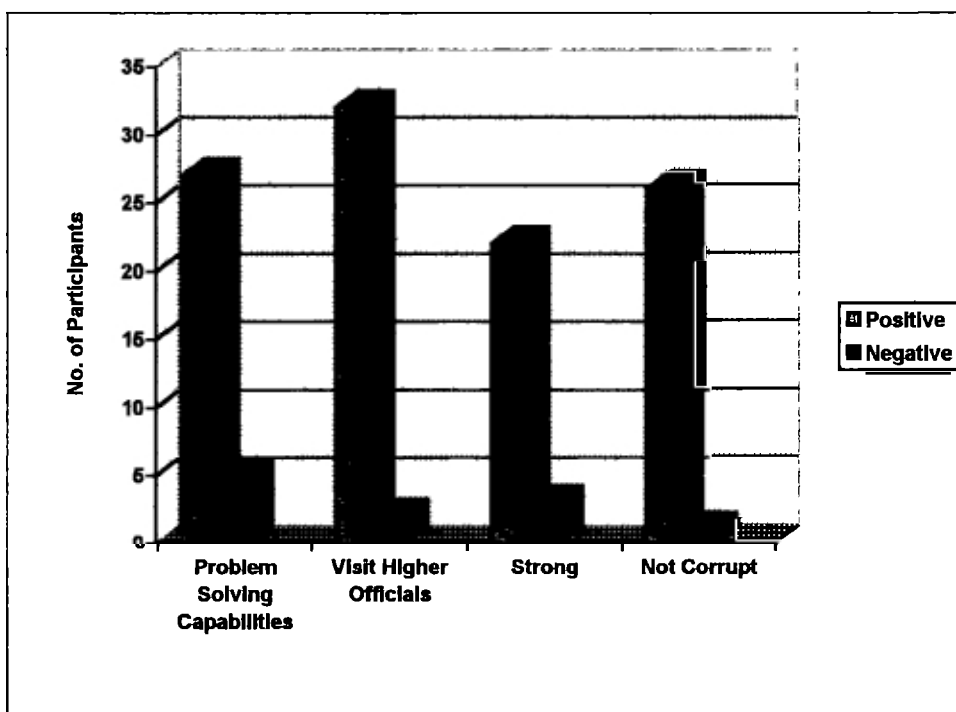
STEP 5: With the concrete understanding of the problems from the bottom and the bureaucracy at the top, the local leaders, along with BDMSA and SEWA, were ready to make their demands for immediate solutions to the water problems in their villages.

Figure 8: Building Leadership Through the Water Campaign



To date, the Campaign has had impressive results, and the process is, of course, ongoing. *Figure 9 : Evaluation of Local Campaign Leaders* on page 60 outlines the results of the participants' evaluations of their local leaders.

Figure 9 : Evaluation of Local Campaign Leaders



As shown in the above diagram, the majority of the evaluations were positive. However, the following traits were identified as the most common problems with the local leaders:

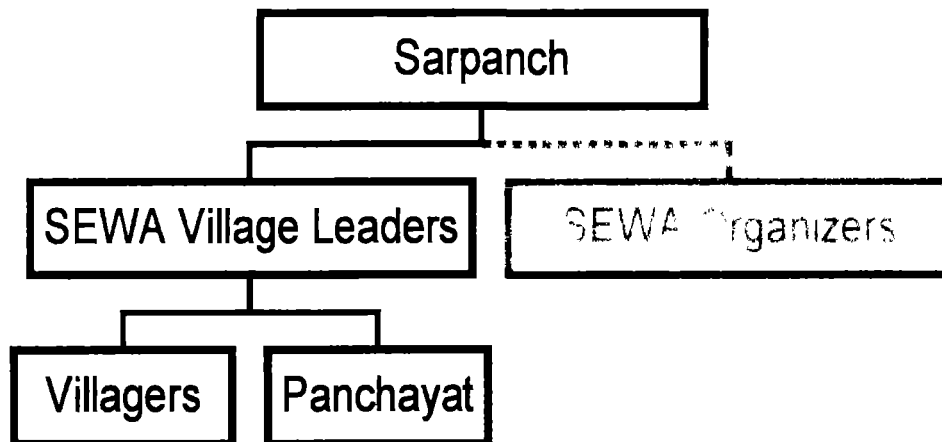
- The leaders do not have enough political influence at higher levels
- The leaders do not have enough technical background

The Campaign organizers also identified the need to build local leaders' capacities to continue the Campaign at the village-level without SEWA. Leaders must be able to keep their communities mobilized and organized, monitor sources, identify new problems, and negotiate with relevant government officials as new needs arise. Increased emphasis on building these capacities has been placed in the action plan for next year's campaign.

Workshop #2

As in the Campaign, local managers were identified in the initial stages of the Datrana pond project to mobilize the villagers and manage the project with BDMSA. The managers formed the local Pond Committee. When asked to identify the managers of the pond, the participants identified the Village *Sarpanch*, the SEWA village leaders, SEWA organizers, the villagers, and the *Panchayat*. *Figure 10 : The Datrana Pond Management Structure* on page 61 depicts the levels at which the participants placed the various managers. Significantly, nobody identified higher officials, such as the District *Panchayat*, the *taluka* Development Officer (TDO), or GWSSB. This showed the sense of local ownership and management of the pond.

Figure 10 : The Datrana Pond Management Structure



The participants felt that the biggest advantages to having local management were:

1. Ability to identify problems and solutions

Because the local managers are also members of the village, they are able to provide insights into the village problems and suggest solutions that would be viable to the local situation. Sometimes SEWA organisers entering a new village are unable to do this. In addition, village members are usually more likely to talk openly about their problems and needs with their fellow village members than they are with outsiders.

2. Flexible management

Local communities are working full time, often at irregular hours. Thus ensuring their involvement in managing local development projects demands

flexible management schedules. The participants felt that local managers, who are also involved in other local jobs, are most sensitive to these needs. For example, they hold meetings at night after the day's work. In addition, the meetings are held in the village center, in the members' homes, or on the bank of the pond itself. Thus the village members are also able to attend the meetings, and the managers are constantly in tune with the field situation.

3. Village awareness of management structure

The participants felt that having managers who are local village members allows more villagers to be involved and aware of the management. The participants had a very clear awareness as to the role and schedule of the Committee. 16 of the 18 participants knew exactly when the Committee meets and where. However, the villagers could not identify the exact roles of the individual Committee members. This may be due to the sharing of duties among the members, which makes the division of responsibilities a bit hazy.

The Pond Committee has been working for nearly three years, and the workshop reflected their active involvement in the project. Their involvement, in turn, has led to a strong awareness about the process, which they can now draw from when initiating new projects. 9 participants indicated a clear understanding of the project's step by step planning process, 8 of whom were members of the Pond Committee (including the Chairman, Deputy Chairman, and the *Sarpanch*). The ninth was the SEWA field staff coordinator. On the other hand, those who joined the project at a later phase, such as the caretaker, had trouble detailing the planning process.

While awareness and involvement in local level management is high, the workshop also reflected some problems concerning the maintenance of the pond. For example, the participants, including the Committee members, showed a heavy dependence on SEWA. SEWA's aim is to make the Pond Committee independent (depicted by the dotted line to SEWA in *Figure 10 : The Datrana Pond Management Structure* on page 61. However, 17 participants said that they still visit SEWA when there is a problem, and almost 50% identified SEWA as being responsible for the maintenance and repairs of the pond. In addition, only 6 participants said they took personal responsibility for the maintenance of the pond. A few women noted that women check the pond every day when they go to fetch water, but the men only check it during the holy month when they have to visit the temple on the banks of the pond.

During the Committee meeting, however, the Committee members agreed that it was time to start collecting contributions from the villagers to cover the repair and maintenance costs.



After a lengthy debate on the details of the costs, the Committee agreed to collect contributions from all the villagers and the *Sarpanch* agreed to match the total contributions from his own pocket.

In addition, the participants did not reflect a very high level of awareness regarding the importance of preventive care. Only 4 participants said that preventive care was important. Four participants said the pond is only maintained after a problem arises. When asked how the pond is maintained, many identified the caretaker that the Committee has employed to enforce correct and efficient water use. However, 6 participants said that their neighbors were misusing the pond by allowing their animals to drink from it, or bathing and washing their clothes in it. This brings into question the caretaker's role. During the Committee meeting, however, substantial time was spent on collecting contributions for the pond plantation (see Principle 1 and 8 for more information). The Committee also agreed to explain the importance of the plantation to the villagers and encourage villagers to take more responsibility for the pond's maintenance.

Workshop #3

In Piprala, a local Watershed Committee was organized under the national guidelines of the Watershed program. SEWA has been facilitating the capacity building of the Committee. Although the local managers did show some strengths, their level of awareness and their capacity were not as high as in Datrana. During the Committee meeting, BDMSA member and the SEWA organizer often had to prompt the discussions, and even then one or two Committee members (one whom was the *Sarpanch*) did most of the talking. These results are characteristic of the initial stages of building local level management and useful in illustrating the difficult process. In addition, as the project is new, many of the participants are new SEWA members and thus new to the project and SEWA's approach.

The participants identified the following managers to be the most influential in the checkdam project:

- Themselves,
- The *Sarpanch*,
- The Watershed Committee,
- DRDA and TDO, and
- The landless.

Unlike in Datrana, the checkdam falls under the National Watershed guidelines, and its management structure therefore is not limited to the local level. Interestingly, although the participants identified the landowners as the biggest beneficiaries of the checkdam, almost everyone agreed that the landless should be the primary managers to ensure that they were not left out of the project or taken advantage of by the rich land owners, as they had been in the past.

The participants showed a good understanding of the program and SEWA's role; however, they also said they needed more information and training on the technical details of soil and water use and on management skills. While more is needed, the level of technical awareness that has been achieved in the short time since the project began is also worth noting. For example, 6 participants recognized the need to account for excess water to protect the dam by building a waste wear and a canal or a rivulet. Many also suggested utilizing the excess water in agriculture or for feeding cattle.

Thirteen participants said they had been involved in the planning process, but only 7 seemed to understand it. 6 of the 7 were agricultural laborers, and the 7th was the *Sarpanch*. This reflected their comparatively greater involvement in the project as the dam would directly increase their incomes by creating more jobs for them.

Finally, participants were aware of the number of members in the Committee and where and when it meets. 15 said they were satisfied with the Committee. However, many were unclear about the roles of the different members and the selection of the members, the Secretary, and the Chairman. Most understood their role in the project as participants in the daily process and the Secretary's role as the account keeper. However, many were confused about the role of the Chairman, who is in charge of getting the technical sanction for the checkdam, and the other members, who are in charge of presenting the people's needs to other offices. This may have been due to a lack of involvement in the Committee's affairs and the Committee's

lack of interaction with the other village members. Increased interaction will be needed in the near future to increase awareness.

3.4.3 Principle 4: Lessons Learned

Management at higher levels is sometimes easier, more efficient, and more advanced than the local management that SEWA strives for. However, local managers have a clear understanding of their own land and their own communities. Local management is not only desired by the local population, but it is also essential for ensuring the project's sustainability and local ownership. Local capacities, however, need to be built and the road needs to be opened for them to apply their comparative advantages to local resource management. While building local management capabilities is no doubt a long and difficult process, no constraint should ever stand in its way.

SEWA has found that organizing a local management organization in the initial stages helps bring key insights from the ground level into the project plans. In addition, local managers facilitate the initial mobilization of the local communities. Involving local organizers in every subsequent step of the project cycle is key to building their management capacities, so that they can eventually take charge of maintaining local water resources. Because local managers have direct interests in the local resources, they are most likely to maintain them. Because they are also members of the village, villagers tend to be more comfortable working with them and getting involved in their local development.

To date, SEWA's focus has been on organising local communities and increasing their capacities to plan and implement projects. Now SEWA should place more emphasis on increasing villagers' awareness and capacities in maintaining the projects. In addition, committees should divide their responsibilities more clearly so that tasks do not overlap and villagers understand better who to go to for different problems.

Principle 5: The Involvement Of All Stakeholders Is Required.

3.5.1 Principle 5: Background

"The control over water in desert areas is the control over a society; thus the local community must be involved in a systematic way."

—Mihir Bhatt, Director of FPI

In the past, local stakeholders have been largely left out of the development equation in India's water sector. The central government has been responsible for national and international water policies. State governments have held the primary responsibility for rural water schemes. Occasionally, some responsibilities have been handed over to district government bodies, such as DRDA and the block Panchayat. As outlined in Principle 4, industrialists and rich farmers have enjoyed the most bargaining power among water users in terms of affecting allocation policies and ensuring an adequate supply for themselves. Finally, in the few instances in which higher bodies have sought participation at lower levels, it has been male villagers and Panchayat members that have spoken.

When SEWA first began working in Banaskantha, it found that few poor rural women had ever participated in open negotiations amongst themselves or with the government. Nevertheless, they were eager to get involved as they bare most of the impacts of misdirected development efforts. SEWA's focus has thus been empowering rural women to get involved in local water resource management, so that they can negotiate and cooperate with other organizations; other sectors; and government bodies at the village, block, district, state, national and even international levels.

The challenge, however, has been increasing their confidence to speak and preparing them to participate in an organized and productive manner. Merely "allowing" all stakeholders to participate in government programs is not sufficient. Currently, those with the most at stake (such as villagers, especially women) have the least experience and power to participate on an equal playing field with higher bodies. Rural women must be given,

sometimes taught, the capacity to get involved, stay involved, and gain control. They also have to be exposed to the different levels of participation.

Despite the challenges, SEWA has found that ensuring community participation in every step of the project cycle is essential to increasing awareness, increasing interest, increasing the capacity to manage, and ultimately increasing local ownership.

So how are local stakeholders involved? SEWA uses 3 main approaches.

1. Empowering poor women to voice their needs

SEWA tries to prepare all the users of a local water resource to participate in it's development. However, it's focus is development under the leadership of poor women. Poor women not only hold the primary responsibility for local water resources, but they are also the least represented in village office and leadership positions. Therefore, it is vital that they be given the opportunity and the training to speak and take action. (*See Principle 6 for more*).

2. Organizing local management

As detailed under Principle 4, SEWA has found that building local leaders is key to mobilizing the local communities to participate in local development. (*See Principle 4 for more*).

3. Holding open village wide meetings (*gram sabhas*)

One of SEWA's key methods to ensuring total participation is holding open village meetings, in which every member in the village is invited to speak. Through the *gram sabhas*, the villagers become acquainted with SEWA and it's work. The *gram sabhas* also give villagers an opportunity to ensure that the project is designed to meet their needs. SEWA organizers try to ensure that everyone is able to speak during these meetings. One of the biggest initial challenges is encouraging women to speak out, even in front of their husbands and village leaders. In some cases, men are not allowed to speak until the women are finished. Empowering women to speak is a central part of SEWA's capacity building efforts. So, in other cases, SEWA organizers complement the meeting discussions by continuing them in the villagers' homes or complementing them with smaller meetings for women only. As women gain the confidence and agency to speak freely in public, SEWA can increase it's reliance on the open village meetings.

3.5.2 Principle 5: Results of the Assessment

All three workshops reflected the villagers' eager interest in being involved in water resource development. Ensuring the entire community's involvement seemed to ensure that the project met the different needs of stakeholders at different levels even within the community. Unless the local stakeholders have the capacity to get involved, they cannot negotiate with the other stakeholders at higher levels, such as local government bodies, landowners, and industrialists. The participants in all three cases also said that being involved in every step was vital to building the villagers' ability to organize and manage the projects (see Principle 7 for more information).

Workshop #1

The Water Campaign aimed to increase the number of villagers involved in water resource management. The Campaign used village-level advocacy, village-wide participation, and village-based leaders to achieve this. 34 of the 40 participants said that the involvement of the villagers in the Campaign, increased their sense of individual ownership and responsibility toward the village water supply. Many participants said it was the first time they were asked to give their input on the village water sources. 29 said their involvement increased their ability to organize and relate their needs. Half the participants felt that involving the government in the Campaign by forcing them to work with local stakeholders increased the government's awareness as well, particularly on village issues, SEWA's work, and even their own responsibilities. Many found that the government is now more willing to coordinate with villagers in other areas.

Increasing their capacity to participate and providing the opportunity to speak led to projects based on their needs. SEWA entered through the *gram sabhas* to ensure everyone's participation, and hear everyone's input. However, participants also said that employing local leaders was especially useful in ensuring the participation of those women who would otherwise be intimidated to speak in front of others.

Workshop #2

In the Datrana workshop, the participants said that the involvement of all stakeholders was important in ensuring that the benefits of the projects reached all the village members. In addition, ensuring everyone's equal say also seemed to ensure a forum for conflict resolution.

In Datrana, the pond site was selected, because the villagers felt it was an equal distance from everyone's homes, and the area had a water harvesting

capacity that could meet all village members' needs. Many participants said one of the most important roles of the Committee is to ensure the proper use of the pond water. As the villagers were involved in selecting the Committee, they felt confident in relying on them to negotiate conflicts. As in the Campaign, community involvement was ensured primarily through *gram sabhas* and the local managers.

"Water is our life. I can't understand why some people get water while we stay thirsty. If you don't ask those who are thirsty about water, then why ask at all?"
—Sambhu, Datrana

Workshop #3

In Piprala, SEWA was required by the National Watershed Guideline, to conduct a three day Participatory Rural Appraisal (PRA) with the Watershed Development Team. The purpose of the PRA was similar to that of the *gram sabhas* SEWA normally holds when beginning a new project. Namely, the PRA aimed to involve stakeholders at the lowest levels to gain information on the watershed area, understand the villager's perceptions and priorities, and disseminate basic information on the program to the villagers. The initial action plan was designed based on the results of the PRA.

Nine of the workshop participants participated in the PRA. They said the PRA was useful in teaching them new ways of thinking about their problems and taking action to try and solve them. These techniques included mapping and scaling and writing letters to SEWA and their village leaders. As in Datrana, the Piprala participants said that the most important benefit of being involved in the project cycle is that the project is more likely to meet the different needs of all the community members. For example, the main reason the checkdam was chosen as a viable solution was that the villagers felt it would have the largest outreach. It promised to increase the income of large, medium, and small farmers. Not only would it improve agriculture, but it's construction could use local resources and skills.

Again, as in Datrana, the Piprala participants said that involving all the stakeholders in creating rules and a fair management structure, will help reduce the current conflicts in water use.

3.5.3 Principle 5: Lessons Learned

Involving all stakeholders in local water resource development is essential to ensuring that the project meets different community needs. While most government bodies and some rich farmers have been involved in the past, SEWA has found that local stakeholders, especially poor rural women, have been largely ignored. Local communities hold the largest stake in local water resource management, and they are eager to participate. Thus SEWA focuses on empowering local stakeholders get involved, so they can negotiate with the other stakeholders in water resource management.

However, SEWA has also found that involving stakeholders must come hand in hand with building stakeholders' capacity to *stay* involved. Through their involvement in every step of the project cycle, SEWA tries to ensure that local stakeholders evolve from being merely participants to being leaders. In SEWA's case these leaders are usually women, and are always local village members. Through constant participation, the local communities' increase their awareness and sense of responsibility toward their local resources. They learn to speak, organize, and take action. Only once they gain the opportunity and ability to speak on an equal level, can local communities build a table on which to negotiate their different needs.

Principle 6: Striking A Gender Balance Is Needed As Activities Relate To Different Roles Of Men And Women.

3.6.1 Principle 6: Background

Striking a gender balance is, of course, the crux of SEWA's mission, and it is thus an integral part of each of the other 7 principles. In the field of drinking water, women are the primary users. Thus in local water resource management, SEWA strives to involve the local communities and build local management capabilities *under the leadership of poor women*. SEWA has found that providing women with income-earning opportunities can improve the lives of the entire family because women spend their incomes on their family's health, nutrition, and education. Empowering them to speak, not only helps uncover underlying problems in current water resource management, but also allows them to implement solutions that work around the legal and social restrictions within which they work.

As stated earlier, poor women are the primary users of rural water resources. They feed the family and livestock, wash the clothes and dishes, clean the home and the children, care for the ill, and irrigate the fields. Yet over 90% of rural women in the pipeline regions say that they were never consulted about the site of the bore-well and water taps or the hours during which water should be available.

The Water Campaign was especially instrumental in bringing women's voices to the forefront. It was found that the scheme was not meeting women's needs throughout the district.

- Water sources had been placed in village centers, so far from homes that women had to walk up to 4 kms a day in the desert sun to reach them, depriving them of valuable hours when they could have been earning wages or their daughters could be attending school, rather than helping fetch water or staying home to watch younger siblings.
- The distance prohibited them from going to different sources, so they relied on one source for all their water needs from waste disposal to cooking, thereby increasing the chance of illness.
- Inconsistent water flow forced women to wait at the source for up to 15

hours with no food until water was available, adding an increased burden on their health.

- Often water was turned on only after dark, when it was unsafe for women to walk such distances alone.



Local women fetch drinking water from the Datrana Pond

In rural Gujarat, although women are the primary actors in water activities, they have few means to maintain or own water resources. The majority are illiterate and do not participate in politics. As a result, they have been unable to implement the scheme.

- SEWA found that most of the women in Banaskantha were not even aware that the government service exists to benefit them. It had thus been easy for landlords to divert pipelines away from villages to irrigate their fields or demand a high tax from poor families in return for access to the water source.
- Women who were versed on their rights said they had been restricted by social custom or law from confronting exploitative upper-caste males or reporting technical problems to higher officials. Bore-well motors that had worn down from frequent electricity blackouts or taps that had run dry were thus left unattended.
- Because many women did not understand the details of the new water supply, some of them were using up the supply with inefficient water use, leaving others with no water.

SEWA's approach in ensuring women's involvement in water resource development has been two-fold:

1) Analyze individual roles within the family to define relevant actors.

Gram sabhas (village-wide meetings) and casual meetings in homes have been especially effective in allowing women, restricted from entering positions of power because of their caste, class, or gender, to relay their needs and suggestions. Ultimately, more accessible water sources can free women from being tied to unwaged labor.

2) Compensate for the restrictions individuals face in implementing the project.

Poor women are trained to understand the terms of the project and the basic technology being used, so they can eventually manage and operate the water sources and identify problems. Through the Campaign women were also pushed to understand the government bureaucracy, so they can report the problem to the responsible agent or even mobilize the resources to solve it themselves.

Giving women a voice in the community's development will empower them to lead their communities toward better hygiene and natural resource protection; giving them a chance to learn will increase their productive capacity in more skilled, higher paying jobs.

Empowering women in SEWA's project areas, however, means challenging gender roles that have governed the communities for centuries. Thus it has to be done with care and sensitivity. SEWA's women leaders must often leave the village and spend the night in the city to attend a meeting or make demands to a government official. Often SEWA confronts vicious opposition by the male members of a village. At times, opposition is even met by women members. In order to reduce suspicion and internal tensions, SEWA's rural activities are always open to both men and women. While the majority of the leaders and participants are women, several men sit on the management committees and many husbands are actively involved in the projects. In most cases, SEWA's experience has been that once the initial suspicion dies down, men support the women because of the income the women's work is bringing into the family. While the income benefits the family, however, SEWA tries to ensure that it is managed by the women.

3.6.2 Principle 6: Results of the Assessment:

Because gender balance is an integral part of each of SEWA's approaches, the results of the assessment on Principle 6 have been integrated in each of the other 7 principles. The assessment was useful in showing that with some effort, villagers are willing to accept and even promote the leadership of women, especially when such leadership translates to concrete economic and social gains at the household level.

SEWA's members are poor, self-employed women. Most are also from the lowest and backward castes. The female participants in the workshops work as agricultural labourers when they can find jobs. Through SEWA's activities, they have complemented their field labour with other work, such as crafts, nurseries, and milk cooperatives. Few are literate. However, despite their class, caste, gender, and education, SEWA's members also hold top positions in local management organizations.

Workshop #1

The participants in the Campaign workshop were all women, as the Campaign's focus was on building local women's leadership. Women were the chairs, the secretaries, and the treasurers of the Campaign committees. The participants reiterated the importance of involving women in water resource management as they do all the water work. However, they also reiterated that it is not always easy to challenge other people's gender prejudices. Women pointed to the difficulties they faced when negotiating with government officials, because many were not ready at first to listen to a woman.

"When I go to see the TDO, sometimes they don't let me in and they make me sit outside on the ground. I used to be scared and do as they said. But now I refuse to be ignored and I don't leave till the officer sees me and listens to me. Then I return over and over again till he does something to help my village."

— Ukeriben, Kundia village, Baroda

In addition, many women faced problems from their own neighbors, husbands and mother-in-laws. Many are not willing to allow women, especially young women and widows, to leave the village overnight or to attend large meetings with outsiders. When choosing leaders, SEWA ensures that the women are able to leave the village and sometimes stay out overnight.

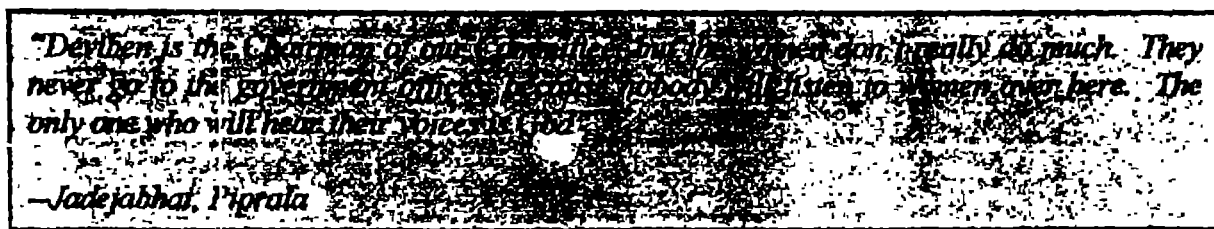
Workshops #2 and #3

The Datrana and Piprala workshops were useful in tracing the long and

difficult process of changing century old gender roles and relations. For example, in Datrana the women and men were actively participating in all the discussions. Neither group was intimidated to speak in front of the other. Hejiben is the Deputy Chair and Subadraben is the Treasurer of the Datrana Pond Committee.



In Piprala, however, the facilitators found it difficult to get several of the women to speak in front of their husbands. A few would not even show their faces.



3.6.3 Principle 6: Lessons Learned

Striking a gender balance is especially important in rural water resource management, where women are currently the primary users and men are the primary managers. Women's involvement and leadership is essential to changing this imbalance and ensuring more effective water projects.

However, empowering women to speak and lead is a slow and sensitive process. Male villagers and existing village leaders must not be made to feel threatened or left out. Rather they should be involved in the activities and benefit directly from the increased incomes and agency that women earn from leading water resource development.

Principle 7: Skills Development And Capacity Building Are The Key To Sustainability

3.7.1 Principle 7: Background

Capacity building at the lowest levels is a continuous process in which SEWA invests considerable time and energy. Through capacity building, SEWA aims to increase both the willingness and the ability of local communities to participate in local development. SEWA's activities are demand driven, so SEWA must build women's capacities to articulate their demands. In addition, SEWA builds villagers' ability to continuously assess, implement, assess, implement, and assess to assure the sustainability of their activities. The techniques used to increase their willingness to participate include exposure programs, information dissemination, awareness raising campaigns, and informal conversation and encouragement. To increase their ability, techniques include hands on responsibility and formal training. SEWA's experience has been that the most effective capacity building efforts are on the job training and direct involvement. Approximately 15% of the Banaskantha budget is used for formal training. In addition, SEWA mobilizes capacity building funds from other programs. To date 2,500 women in Banaskantha have received formal training from SEWA.

Most importantly, SEWA's capacity building efforts aim to build on existing capabilities and remain flexible enough to meet different local needs and circumstances. At times, however, SEWA faces institutional constraints in maintaining this flexibility. Because SEWA is unable to start a project without formal approval, they must often times work within restrictive government guidelines. For example, the Watershed Development Program requires one college graduate on the team. Few college graduates exist among the community members, and even fewer city graduates are willing to stay in the villages for extended periods of time.

3.7.2 Principle 7: Results of the Assessment

The participants in all three workshops said that being involved in every step of the project cycle was key to building their capacity and interest in managing their local water resources.

Workshop #1

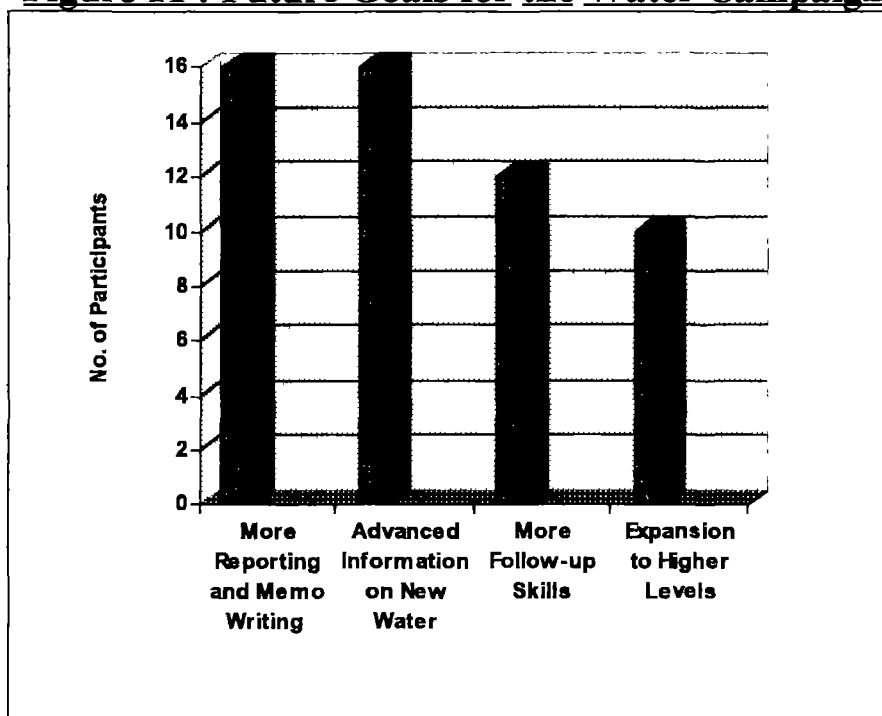
The participants in the Campaign workshop felt that the most useful impact the Campaign had on their capacity to address local water resource issues was that it increased their awareness. With the increased awareness on the local water situation, the way to mobilize the community to take action, and which government official to go to implement solutions, the local community was able to take charge of their local resources. The participants said that increased awareness had not only brought a regular and steady supply of water to several villages, but also increased individual sense of ownership of the local water sources, increased the villager's strength and ability to organize, and increased hygiene.

As part of the effort to construct capacity building as a continuous process, the Campaign has been extended to run another year. The goals the leader's identified for next year's campaign, revealed a relatively advance level of management. See *Figure 11 : Future Goals for the Water Campaign* on page 78.

The most common goals were:

- Ensuring more reporting and memo writing
- Gaining more follow up skills to help in the planning of new projects and maintenance of old ones.
- Expanding to higher levels (such as district, state, and some even said national)
- Attaining advanced information on other types of water activities (such as other government schemes and water harvesting techniques)

Figure 11 : Future Goals for the Water Campaign



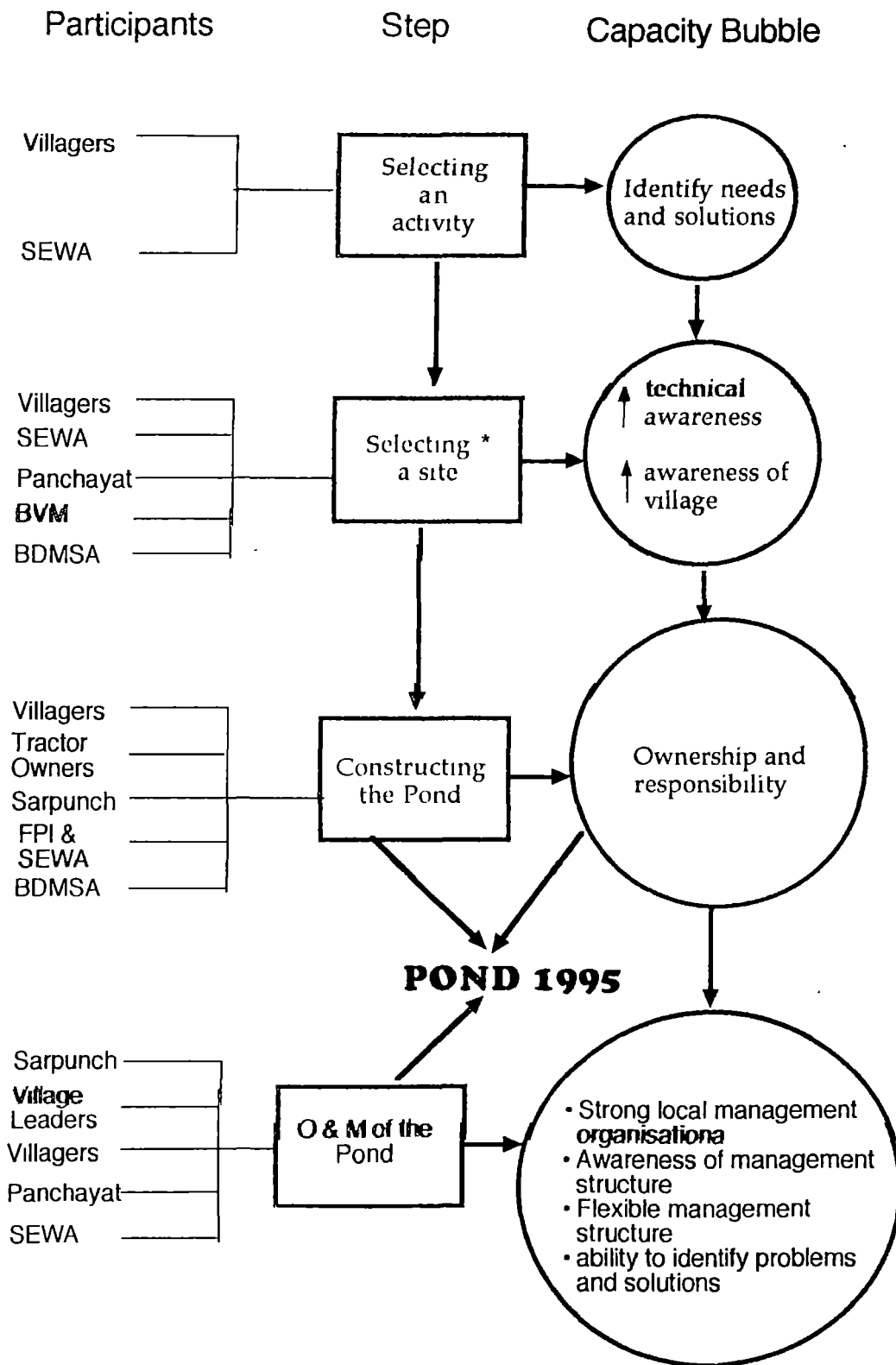
Workshop #2

In the Datrana Workshop, the participants outlined the steps they felt were most useful in developing their capacity. As outlined in *Figure 12 : Building Capacity through the Pond Process* on page 79, each step from the beginning to the end involves the villagers. As the project evolves, new actors are included to provide different types of expertise; the villagers work directly with the other actors, and learn from their outside expertise. The participants listed are those identified by the participants at the workshop. Each step adds more skills to the local capacity bubble, which expands with time and experience.

Step 1: Selecting an activity.

This step not only ensures that the project will be directed to meet local needs and fit local circumstances, but it also helps local communities learn to identify needs and connect their needs to viable solutions. Many participants said it was the first time they were asked to think in an organized, action oriented manner as a community. It was also the first time many villagers were given the opportunity to develop their ideas within the constraints faced by both their own village and out the outside agencies.

Figure 12 : Building Capacity through the Pond Process



Step 2: Selecting a site

Selecting the site increased the villager's awareness about their own village land and environment. It also increased their awareness on the basic technical details of the pond project, regarding soil quality, harvesting capacity etc. Almost all the participants were able to write about the technical and environmental reasons behind the pond's site.

Step 3: Constructing the pond

The pond was constructed by the villager's with the local labor and/or resources. Most participants contributed labor; however, villagers also gave money, some gave raw materials. This step increased the villager's sense of ownership and responsibility toward the pond. Because they knew what they were constructing and why, they were willing to invest in translating their plans into reality.

Step 4: Operation and maintenance of the pond

Finally the villagers reach the last step, which is the current step and an ongoing step. Through their involvement in every step of the pond's planning and implementation, the community is able to build a strong capacity with which to ensure the pond's Sustainability. (*See principle 4 for more information*)

Workshop #3

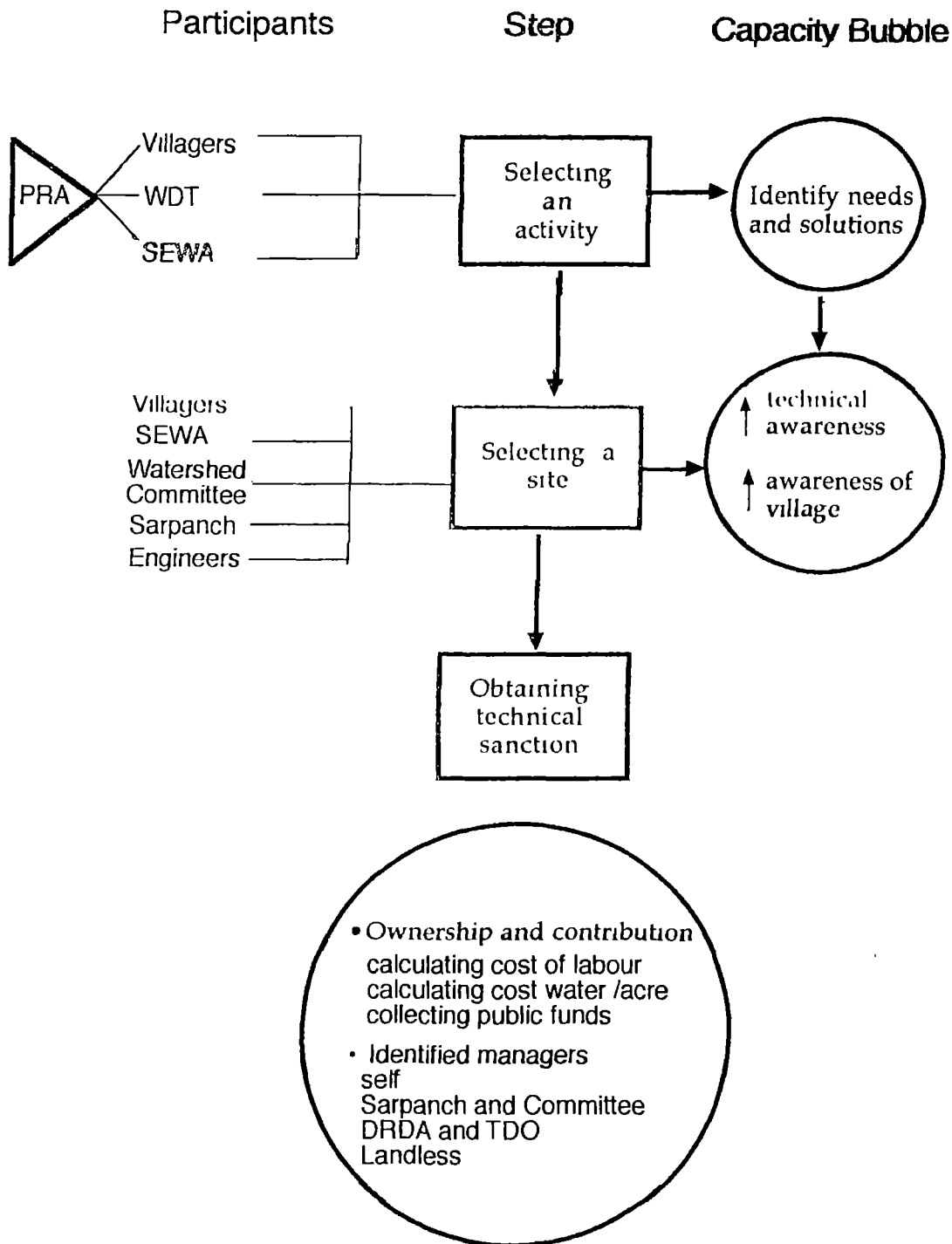
The participants in Piprala outlined a similar chart to Datrana, where being involved in every step was key to building local capacity. However, because the Piprala project is in an earlier stage than Datrana, Piprala's capacity bubble is not yet as advanced as Datrana's.

(Please refer to *Figure 13 : Building Capacity Through the Checkdam Process* on page 81 for the following capacity building steps).

Step 1: Selecting an activity

The selection of the activity in Piprala emerged from the PRA. However, the results were similar to Datrana. The participants said the PRA gave them the opportunity to voice the difficulties they were facing and weigh different options according to their needs and circumstances. It also taught them techniques to outline their needs, organize, and link their needs to viable solutions.

Figure 13 : Building Capacity Through the Checkdam Process



Step 2: Selecting a site

Again, because they were involved in the selection of the site, several participants displayed a relatively high level of basic technical awareness on the checkdam and the village environment. However, watershed development is a complicated process, and the participants felt that more technical capabilities are still needed. (*See principle 4 for more information*)

Step 3: Obtaining technical sanction

This step was the one most recently completed. Attaining the technical sanction was a confidence boost for the Committee, as it was the first time many of the members had taken part in such technical designing and had to work with government officials and technicians.

3.7.3 Principle 7: Lessons Learned

Capacity building must be an ongoing process to ensure the capacity to get involved and stay involved. SEWA has found that formal classroom training can not succeed unless the trainees have the opportunity to practice what they have learned. Moreover, it is sometimes difficult for villagers who have never attended school to sit through lengthy lectures and absorb information in this new setting. Therefore, the key to building local capacity in SEWA's work is involving local actors in every step of the project cycle from beginning to end. Through this process, local communities not only realize their own capacities, but they also learn to build on their capacities by drawing from outside capacities. After building an initial understanding of the systems and process, villagers can then complement their practical training with formal training to gain advance knowledge and opportunities. Eventually, local organizations can then learn to even give training.

Building local capacity is never easy. In some cases, SEWA has had to spend substantial time just teaching people to get quiet and stay tuned. Capacity building at the lowest levels requires patience and a lot of time. However, it is absolutely essential to ensuring local involvement and local management. Together the three can lead to local ownership and local sustainability.

Principle 8: Water Is Treated As Having An Economic And Social Value

3.8.1 Principle 8: Background

As outlined throughout this assessment, water in desert communities is treated as any other rare commodity--with utmost care and respect. The difference between water and precious metals, however, is that the value of water lies in it's necessity, not it's appeal. The supply of water determines human work, income, and, health--and thus human life. Local rural communities are well aware of the social and economic consequences of scarce or overabundant water supplies. Therefore, it is the local communities in Banaskantha that have pressed SEWA to recognize and address the social and economic components of water.

However, while there has been little need to increase local communities' awareness on the economic benefits of water, increasing their willingness to accept the economic costs of water has been a challenge. Access to water resources is seen as an inalienable right, not one that needs to be purchased, especially by those who have so little resources.

At present, there is a government water tax that is collected by the *Talati*. Each household must pay Rs. 5 every month regardless of whether or not they have access to water. Households, can pay each month, quarterly, or annually. Each household in the pipeline scheme is required to pay Rs. 14 per year. The *Panchayat* is responsible for monitoring each household's payment for both the standard government tax and the pipeline charge. However, more than 30% of village households do not pay at all, and most do not pay the entire amount. Currently, SEWA does not have a formal system to monitor which villagers do and do not pay for the maintenance of SEWA's projects. In the last 10 years, since 1987, there has been no increase in the costs or the number of irrigation licenses.

Incurring the economic costs of water resource development in the planning, implementing, and maintenance phases increases the local sense of ownership and responsibility toward the resources. All activities are planned

and designed according to an annual participatory business plan. The plan outlines the costs and benefits of the project and is open for everyone to read and/or contribute to. All subsequent monitoring reports are based on the plan. Most activities are implemented with local labor or contributions. Local contributions result in mutual accountability and increases personal responsibility toward the project and cost monitoring. Finally, the local management committees are then guided collect local contributions to maintain the activities.

3.8.2 Principle 8: Results of the Assessment

Workshop #1

The Water Campaign raised several issues concerning the fair pricing of water. However, during the workshop it was apparent that more attention will be needed on raising awareness on this issue in the future.

32 of the 40 participants said they have purchased water; however, 30 wrote that paying for water is unfair. 13 were not aware of the cost. Only 2 said, "Water is our life, so we should pay for it."

Workshop #2

The pond was constructed by local labor. 10% of the construction costs were covered by local contributions. 90% of the water users have contributed to the pond construction. As outlined in Principle 4, the issue of increasing local contributions for the maintenance of the pond has become a priority on the Committee's agenda. Currently, each household is supposed to deposit maintenance fees for the pipeline scheme with the Water Board. However, during the meeting, the Committee held lengthy discussions on new mechanisms that could be designed to ensure more effective and accurate collection of maintenance fees for the pond. They agreed to collect a Rs. 100 from each household every year to form a pond maintenance fund. In addition they will provide receipts to those who pay, so that they can monitor who pays and who does not. A committee member will be responsible for monitoring the payments.

Workshop #3

As in Datrana, the Piprala Committee recognized the importance that local contribution has on local ownership. Here, however, the focus was on the contributions for the construction of the checkdam and the water use

thereafter. As mentioned in Principle 3, the participants in the Piprala workshop seemed more ready than those in Datrana and the Water Campaign to pay for the additional supply of water that would result from the project. Much of this is due to the local perception that paying for water for agricultural purposes is reasonable, as it is serving as a raw material for an economic activity; paying for water for drinking purposes, however, is viewed as an infringement of basic rights to life. Currently, the community must pay 67 Rs per hectare for irrigation and 20 Rs. For the local functioning of the machines. Under the watershed guidelines, 10% of the checkdam's cost must be covered by the local community. Almost every participant agreed that all the water users should pay for the dam construction. However, they also all felt that the contributions need not be equal, but should depend on the income and willingness of the individuals. During the meeting, Committee members discussed ways in which they could calculate the cost of labor and the cost of water per acre, and effective mechanisms for the collection of the public funds.

3.8.3 Principle 8: Lessons Learned

Local communities know the economic and social benefits of water. Their lives and their livelihoods depend on its adequate supply. Therefore, in most cases, the communities SEWA has worked with have been willing and able to mobilize local contributions to implement new water sources. However, instilling local willingness to incur the economic costs of an accessible and adequate drinking water supply has been a challenge. Local communities have not been as willing to pay for the maintenance or repairs of existing water resources.

As with the other principles, SEWA's approach in increasing local contributions toward water resources is to work through the local management communities. Local contributions help ensure local ownership and Sustainability of local water resources. SEWA tries to instill this awareness among the local managers, who in turn, increase the awareness and mobilize their local communities to take action. In the future, more emphasis will have to be placed on building the capacities of local women leaders, organizations, and Panchayats to create and enforce strict monitoring systems of village payments.

Chapter 4 ♦ Conclusion

SEWA first began addressing water resources in Gujarat because it became clear very quickly that no economic activity could develop in the desert villages until a steady and adequate supply of water could first be ensured. The economic and social value of water resources among poor communities was, of course, no novel discovery. A sharp decrease in ground water quality and quantity due to human activity combined with the harsh natural conditions in the area have made water scarcity a recognized crisis at the policy level for years. The Gujarat State government along with the Indo-Dutch Bilateral Aid had been investing considerable time and resources to address the issue with highly advanced pipeline technology for almost a decade before SEWA even entered the region. SEWA's experiences in the area, however, made it clear to them that neither water sources nor the community could develop or sustain progress without local management opportunities, skills, and experiences. Developing water resources *through* the local communities, rather than *for* them, has perhaps been SEWA's most novel and productive contribution to the region and its water resources.

SEWA's efforts aim to empower people, especially women, to conquer their own struggles. Deep set prejudices, superstitions, and socially constructed gender roles are often important variables in their struggles. Removing them or working around them can be as difficult, and often times more time consuming, than reversing their poor economic condition. However, it is SEWA's strong belief that both struggles (one for individual empowerment and one for economic development) are co-dependent; one cannot succeed without the other. Rural women hold the primary responsibility for household water use. So how can a drinking water project be useful if it does not consult women, women do not understand it, and women do not use it? Small, marginal, and self-employed farmers comprise more than 65% of the agricultural labor force. So how can a checkdam help increase agricultural output if they are not given the power or the voice to demand a part of the water?

In water resource management, SEWA empowers people, especially poor women, to voice their needs through informal conversation and village-wide meetings. It increases community awareness and interest and builds the community's management capacities by involving them in *every* step of the project cycle. It mobilizes local participation, draws from local insights, and ensures a direct interest at the local level in maintaining water resources by

building local managers. These local managers are usually women who the community chooses to be its representative. The central focus of SEWA's water activities are local water resources, as they often rely on traditional methods that the local communities are familiar with. These local resources aim to complement the regional pipeline water. Important to SEWA's approach is cooperating and working with male village members, existing village leaders, and the government. SEWA's aim is not to overthrow existing power bases or compete with existing development activities. Rather its aim is to build the capacity of the poorest members of society to author and own their own development projects. They must learn to constantly lead the cycle of assessing, implementing, reassessing, and reimplementing. They must become leaders who can negotiate with others on an equal playing field.

It is difficult to assess SEWA's approach without meeting the communities or the people who play such a central role in SEWA's work. Nevertheless, SEWA also feels it is important and mandatory to share its experiences with those who cannot come all the way out to the villages of Banaskantha. This Assessment aims to do this while keeping in line with the spirit of SEWA's aim to include and empower local communities in water resource management. The assessment relies on the voices of those who are directly affected by SEWA's water activities and are responsible for managing them at the lowest levels. The assessment also aims to build local communities' capacity to communicate with the outside world in the mainstream language by participating in and eventually conducting such assessments on their own. Assessments are a critical part of water resource management, and SEWA feels it is essential that stakeholders at the lowest level understand them.

The problems of water scarcity in the area have in no way yet been entirely erased. The importance of efficient water use even when water supply is adequate and local contributions for the maintenance of water facilities remain to be recognized on a large scale at the community level. In addition, as the projects are being completed, the need for increased attention to formal maintenance systems within the local organizations is increasing. Changing weather patterns and natural disasters continue to threaten village water resources, constantly demanding new development plans and approaches that can address the changing environment. Inadequate access to knowledge on advanced technology and systems still hinder local communities from keeping up with the fast pace of our modernizing world.

Nevertheless, we hope that this assessment pays testimony to the immense strides the local communities and SEWA have made in pioneering local water resource management. The assessment demonstrates their

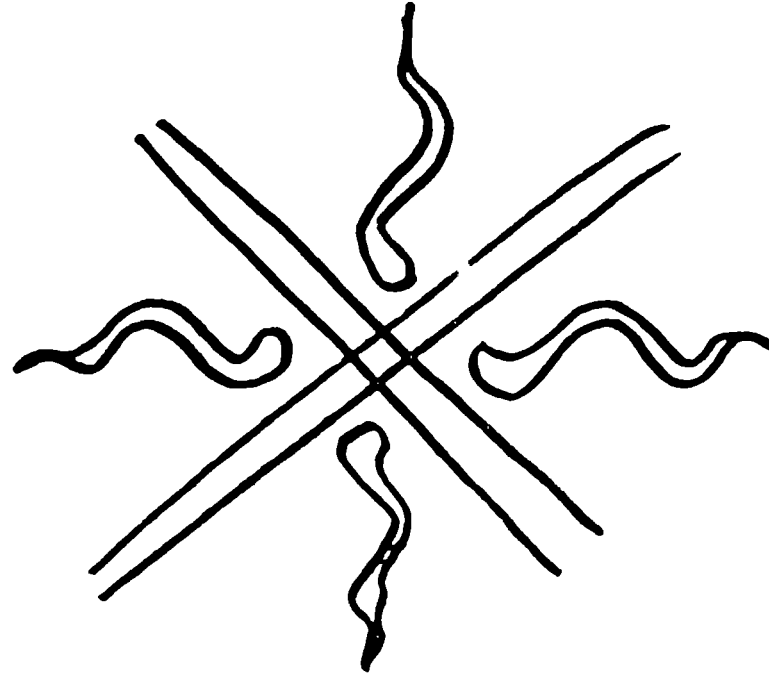
capacity to think about critical issues and address them in innovative ways that fit their needs and circumstances. It shows the importance and value of building on traditional knowledge and systems. It also reflects the satisfaction in terms of both physical and personal achievements they have gained from reviving and managing local water resources.

It is SEWA's sincere hope that this Assessment will prove useful in disseminating new approaches, successes, and constraints in local water resource management. In addition, we hope it will serve as a useful model for future participatory assessments of this kind. It is essential that such participatory assessments be combined with traditional cost-benefit analyses both at the local level and at the highest policy level in order to reflect an accurate picture of development activities. Only then can we begin to accurately direct our development activities toward sustainable progress.

***Annex 1 : Sample Pages Of The Participatory
Exercise Booklets At Workshop 3, The Piprala
Checkdam***

Water Harvesting Checkdam
ਪੀਪਰਾਜਾ ਚੈਕਡੇਮ

Participatory Assessment
ਸਹਯੋਗੀ ਮੁਲਾਂਕਨ



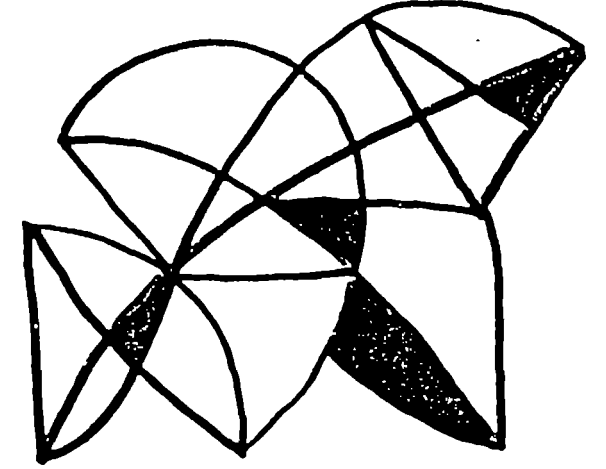
February 1997

Foundation for Public Interest
Banskantha DWORA Mahila Sewa Association
SEWA Academy

तमारा विषे
About me

नाम : _____
धंधो : _____ अभ्यास : _____ उमर : _____
ग्रामनुं नाम : _____ तालुको : _____ शिळो : _____

अन्य : पाणी समितिना सभ्य
(✓को) येरमेन
मंत्री
प्रमुख
टेकनीकस व्यक्ति
स्वाश्रयी बूथना सभ्य
उपलभता बूथना सभ्य.



પી.આર.એ. શરૂઆત
Starting of P. R. A.

પી.આર.એ. એટલે પાર્ટીસીપેટરી ટ્રસ્ટ એપ્રુઇઝ
સરખ શબ્દોમાં કહીએ તો
ગ્રામ લોકોના સહભાગીપણાથી પ્રશ્નો પ્રણવા.



તમે આ પી.આર.એ.માં ભાગ લીધો છે ? _____

તમે કયા પ્રશ્નોની રજૂઆત કરી ?

૧. _____

૨. _____

૩. _____



તમારા ગ્રામમાં વોટરશેડ યોજનામાં કયા કયા કામ કરવાના છે ?

Main Watershed Activities

- | | | |
|----------|----------|----------|
| ૧. _____ | ૪. _____ | ૭. _____ |
| ૨. _____ | ૫. _____ | ૮. _____ |
| ૩. _____ | ૬. _____ | ૯. _____ |

તમે વોટરશેડ યોજનાની કામની પસંદગી કરતી વખતે કઈ કઈ બાબતો ધ્યાનમાં રાખી ?
(નીચેની યાદીમાંથી સાચું હોય તે લખો.)

Selection of Watershed Schemes

- | | |
|----------|----------|
| ૧. _____ | ૪. _____ |
| ૨. _____ | ૫. _____ |
| ૩. _____ | ૬. _____ |

(નાણાંકીય બાબતો, સરખંચનો લાભ, ગરીબોને લાભ, ગ્રામના બધા લોકોને લાભ સ્થાનિક વસ્તુઓ અને માવડતનો ઉપયોગ, સેવાને લાભ, ગ્રામના પ્રખોનો કાયમી ઉકેલ લાવે તેવો.)



***Annex 2 : Program And List Of Participants To The
Preliminary Presentation Of The Analysis In
Ahmedabad***

List of Participants

- (1) Dr. A.W.P. David - Additional Chief Secretary - Rural Development
- (2) Mr. Tushar Shah - Ex Director, IRMA
- (3) Mrs. Indira Hirway - Gandhi Labour Institute
- (4) Mr. Carel Brands - First Secretary, Royal Netherlands Embassy
- (5) Mr. H.D. Nagrecha - Member Secretary, GWSSB
- (6) Mr. Bhatnagar - GJTI
- (7) Mr. David Marsden - SDU, The World Bank
- (8) Mr. Rob Weijderman - Haskoning, Netherlands
- (9) Mrs. Purnima Vyasalu - PSU Karnataka
- (10) Mr. Philip Guirlet - UNDP

Presentation on Participatory Assessment of the Promising Approaches on Water Resource Management

11th March 1997
11.00 a.m. to 4.00 p.m.

Venue : Banaskantha DWCRA Mahila SEWA Association
Unit No. 413, Sakar - 2
Opp. Town Hall, Nr. Ellisbridge Corner

Programme

Session 1 : 11.00 a.m. to 1.15 p.m.

CHAIR : Shree Renana Jhabvala, SEWA

11.00 a.m. to 11.15 a.m. : Objectives of the study by Ms. Reema Nanavaty, SEWA.

11.15 to 12.15 p.m. : Presentation on the Participatory Assessment and findings by Ms. Rina Agarwala and Neha Mehta

12.15 p.m. to 1.15 p.m. : Discussion on Assessment Methodology and Emerging Issues

1.15 p.m. to 2.00 p.m. : Lunch Break

Session 2 : 2.00 p.m. to 4 .00 p.m.

**CHAIR : Dr. A.W.P. David, Additional Chief
Secretary, Rural Development,
Government of Gujarat**

2.00 p.m. to 2.15 p.m. : Local community involvement in Water
Supply Schemes by Gujarat Water Supply
Sewerage Board.

2.15 to 2.30 p.m. : Role of Pani Samiti in Operation &
Maintenance of Rural Water Supply
Schemes by Gujarat Jalsewa Training
Institute.

2.30 p.m. to 3.00 p.m. : Discussion and Comments

3.00 p.m. to 4.00 p.m. : Concretising Participatory Assessment
Cycle.

List of Abbreviations

BDMSA	Banaskantha DWCRA <i>Mahila</i> SEWA Association
BVM	Banaskantha <i>Vikas Mandal</i>
DDP	Desert Development Program
DRDA	District Rural Development Agency
DWCRA	Development of Women and Children in Rural Areas
FPI	Foundation for Public Interest
GJTI	Gujarat <i>Jalseva</i> Training Institute
GWSSB	Gujarat Water Supply and Sewerage Board
IPCL	Indian Petrochemical Corporation Limited
NGO	Non Governmental Organization
PEW	Participatory Evaluation Writing
PIA	Project Implementing Agency
PRA	Participatory Rural Appraisal
SEWA	Self Employed Women's Association
SRWSS	Santalpur Regional Water Supply Scheme
TDO	<i>taluka</i> Development Officer
TRYSEM	Training of Rural Youth for Self Employment
UNDP	United Nations Development Program

Gujarati Glossary

<i>agevan</i>	village women leaders in charge of SEWA's activities
<i>Gram Panchayat</i>	village ruling body
<i>gram sabha</i>	village-wide meeting
<i>jalseva</i>	water services
<i>karyakartu</i>	SEWA field organisers
<i>mahila</i>	women
<i>mandal</i>	association
<i>Pani Panchayat;</i> <i>Pani Samiti</i>	village water committee, part of the <i>Gram Panchayat</i>
<i>Sarpanch</i>	elected village head
<i>Talati</i>	Secretary of Village Panchayat
<i>taluka</i>	block
<i>vikas</i>	development