



Enhancing Rural Livelihoods by Enriching Practice and Influencing Policy



Experiences of Development Support Centre



AGA KHAN FOUNDATION



Supported by the Aga Khan Foundation through the European Union Funded SCALE Programme

During 8-12 August, 2011, Development Support Centre (DSC) and the Aga Khan Foundation (AKF) jointly organised a writeshop at Bopal, Ahmedabad in Gujarat involving potential case authors drawn from DSC. This write shop was facilitated by The Livelihood School, an academic institution promoted by BASIX group. The workshop helped to identify seven cases on various interventions initiated by DSC, which have contributed to improving practices in natural resource management at the field level and influencing policy at the state and national level. These cases form the crux of this book.

For further information

Development Support Centre

Marutinandan Villa

Near Government Tube Well

Bopal, Ahmedabad-380058

Gujarat, India

Telephone: +91-2717-235994/2359995/235998

Fax: +91-2717-235997

Email: dsc@dscindia.org

Credits

Project Coordinator

Pratul Ahuja

Seema Dave

Editorial Assistance

Sibaji Bose

The Livelihood School Team

Nabarun Sen Gupta (Senior Faculty)

Srinivas Suri (Senior Faculty)

M. Srinu Babu (Faculty)

Jhanvi Andharia (Consultant)

Sachin Mardikar (Consultant)

The Advisory Team

Chandrakant Pradhan

Sachin Oza

Dr. K.V Gouri

Suneel Padale

Ranu Bhogal

Cover Photographs

Development Support Centre (DSC)

Sketches

Devkant Vishvakarma (Samvaad Media for Inspiration)

Design layout and printing

New Edge Communications Pvt. Ltd.

newedgecommunications@gmail.com

This book has been produced and its contents created, with the financial assistance of the Aga Khan Foundation and the European Union. The contents of this book do not necessarily reflect the views of the Aga Khan Foundation or that of the European Union.

Copyright@AKF 2012

Information contained in this brief can be reproduced with acknowledgement to the Aga Khan Foundation

CONTENTS

CHAPTER	PAGE NO.
1. Green, White and now Blue : The Revolution Triad (PIM) 12 <i>Manu Vadher and Rajendra Patel</i>	12
2. Rejuvenating Natural Resources, Rejuvenating People : A Case of Participatory Watershed Program 25 <i>Swomya Prakash</i>	25
3. Thrust on Thirst : Initiatives on Drinking Water 35 <i>Manju Ravi</i>	35
4. Contemporising Watershed Education : A Case on Basic Training for Watershed Development and Management 44 <i>Gordhan Katariya</i>	44
5. Harnessing Local Potential : Case of Farmers' Spear Head Team 56 <i>Nayana Choudhary</i>	56
6. Jal Vikas Se Bij Vikas Tak : Case on Post Watershed and Post Irrigation Management Transfer 65 <i>Mohan Sharma and Bharat Patel</i>	65
7. Joining Forces : Making a Difference 79 <i>Dipak Rawal and Bhagirath Sathwara</i>	79

ABBREVIATIONS

AKRSP(I)	Aga Khan Rural Support Program(India)
BAIF	Bhartiya Agro Industries Federation BSC
BTC	Basic Training Course
CAPART	Council for Advancement of Peoples Action and Rural Technology
CBWM	Community Based Watershed Management
CFiD	Center for Integrated Development
DDO	District Development Officer
DPR	Detailed Project Report
DRDA	District Rural Development Agency
DSC	Development Support Centre
EV	Extension Volunteers
FSHT	Farmers' Spear Head Team
GDP	Gross Domestic Product
GoG	Government of Gujarat
GSSNL	Gujarat Seeds Nigam Ltd
GWSSB	Gujarat Water Supply and Sanitation Board
IDS	Institute of Developm ttitude
LEEMP	Local Empowerment and Environmental Management Programme
MoU	Memorandum of Understanding
NDDDB	Participatory Irrigation Management
PIA	Project Implementing Agency
PIM	Participatory Irrigation Management
PRA	Participatory Rural Appraisal
SHG	Self-Help Groups
SIRD	State Institute for Rural Development
UG	User Groups
VCD	Video Compact Disks
WA	Watershed Associations
WALMI	Water and Land Management Institute
WASMO	Water and Sanitation Management Organisation
WDT	Watershed Development Team
WORLP	Western Orissa Rural Livelihood Project
WUA	Water Users Associations

FOREWORD

The founding of DSC in 1994 by late Shri Anil C. Shah was the culmination of a vision to create a unique resource organisation in Gujarat that focused on providing knowledge-based support, not just to NGOs but also government agencies and other stakeholders involved in natural resource management. Over the years, DSC continues to provide knowledge-based support to new and existing organisations working in the field of rural development. It is in keeping with this mission that DSC, in collaboration with The Livelihood School (TLS), embarked on an initiative to document its interventions in the field that had led to improving practices at the ground level or influencing policy at the state and national level.

The rationale behind such an initiative was to enable other practitioner organisations to learn from DSC's field implementation experiences instead of wasting precious time and resources on trying to find out which approaches may work and which may not. This was felt necessary since DSC and TLS realised that while successful implementation of programmes remained a key priority for organisations, documentation of the “learning” or the processes and steps involved and the challenges faced during the course of implementation was often neglected. This led to a “knowledge-deficit” in an organisation which adversely affected its ability to make improvements in its programme implementation capacity and scale up successful initiatives into replicable models that could have a bearing on policy.

The current compilation of cases adds to a body of similar work done by TLS with other prominent organisations such as the Aga Khan Rural Support Programme-India [(AKRSPI)] and the Kamalnayan Jamnalal Bajaj Foundation among others. I have immense pleasure in presenting this work to the readers and hope that it will take them through an interesting journey full of new insights, learning and experiences.

Vijay Mahajan

Chairman

Development Support Centre

PREFACE

Non Government Organisations (NGOs) have played a major role in improving rural livelihoods in the country. During the pre and post Independence days they were largely involved in providing relief and welfare services and promoted social reforms. Many of them, inspired by Gandhiji, Vinobaji and others focused on rural reconstruction that involved providing education, health services and employment through the promotion of Khadi and village industries. Till the 70's they played a limited role in natural resource management programmes which were largely implemented by the line departments of the government.

The late 70's and early 80's saw a major change in the NGO sector. Many professionals from reputed organizations such as the Indian Institute of Management, Indian Institute of Technology and Institute of Rural Management, Anand who wanted to do something meaningful, joined existing organizations such as Sadguru Foundation, AKRSP(I), Sewamandir, MYRADA and BAIF or set up their own NGOs such as PRADAN. This infused a multi-disciplinary approach to enhancing rural livelihoods. The NGOs entered hitherto unknown areas such as watershed management, dairy, micro-finance and development of agri-value chains by developing village institutions. There was marked shift in the approach taken by the newer NGOs during this period - from a service delivery approach that considered the existing policies as a given to an approach that believed in institution-building and active policy advocacy work. Philanthropic ethos and service delivery skills were considered necessary but not adequate for NGOs to be effective. The entry of professionals into the NGOs also resulted in an appreciation for the need to have multi-disciplinary resources among their team. From being passive recipients of funds from the government, NGOs considered themselves working in partnership with the government and advocating an enhanced role for communities in development programmes. These efforts started yielding successful results and it became quite clear that if natural resource development programmes such as the Drought Prone Area Programme (DPAP), and the Desert Development Programme (DDP) were to achieve their stated objectives, they need to be more participatory. The need for incorporating the learning from the experiences of NGOs was realized and this led to a paradigm shift in the designing of natural resource programmes in the country.

Thus, the early 90's saw the birth of participatory NRM programmes such as the Joint Forest Management Programme in 1991 and the National Watershed Development Programme in 1994. These programmes focused on bottom-up planning, capacity building of rural communities, formation of village institutions and their active participation in planning, implementation and management of natural resources.

It was in this context that Development Support Centre was born. In 1993, E.M. Shashidharan who was working in AKRSP(I) took a brief sabbatical from his work to understand policy issues related to water and land resources development. Joined by Nafisa Barot and some colleagues in Utthan, they met individuals and civil society organizations in Gujarat that had been working in rural development since long in areas of health and education and

who wanted to work in the field of natural resources management. It became evident from the interactions that there was an acute need, and indeed an expressed demand for an intermediary agency (between funders and implementers) mandated to build capacities among NGOs and CBO to design, implement and manage sustainable and equitable natural resource management programmes. Since there weren't any "Support Organisations" at that time, there was a dilemma on the nature, design and functions of such an organization. Luckily, Anilbhai who had just completed his term in AKRSP(I) agreed to support the idea. Thus, Development Support Centre was initiated in 1994 with E.M. Shashidharan as its first Executive Director and Anilbhai as its Chairman.

With a firm belief that participatory natural resource management through institution development would lead to livelihood enhancement, the organization initiated contacts with NGOs and Government departments dealing with such programmes. Initially these field visits and meetings were largely conducted in three districts in Saurashtra region namely Rajkot, Bhavnagar and Amreli. The organizations were quite varied in nature. While some were initiated by Gandhians and had been operating since pre independence days, others were relatively young and initiated by youngsters who wanted to do something for the society. These visits helped the DSC team to develop an understanding of the work carried out by the organizations, their methodology, the capacities of the staff and the challenges they faced. This led to an assessment of the training and support needs.

DSC soon realized that supporting organizations was not easy! The initial challenge was on how to obtain funding for organizations for implementation of NRM programmes in an integrated manner. Here again the organization was very fortunate as the Government of India launched the National Watershed Development Programme which was to be implemented in the rainfed areas of the country. The guidelines developed by Shri B.N. Yugandhar the then Secretary, Rural Development GOI emphasized on a bottom-up approach wherein the watershed development plans would be developed by the village institutions and they would receive direct funding for the physical activities from the District Rural Development Agencies. The guidelines also indicated that besides Government Departments, NGOs could also be the Project Implementing Agencies (PIAs). The main role of the PIAs would be to organize the rural communities, facilitate their institutions and build the capacities so that they could plan, implement and manage the watershed development interventions. Operationalising this approach required a major shift in thinking, behaving and acting by the policy makers, executing agencies such as the DRDA, PIAs both Government Departments and NGOS and the village communities.

Unlike other states, the district and state administration of Gujarat invited NGOs to become PIAs for the watershed programme. Thus, a large number of NGOs including those that DSC was supporting became PIAs in the respective districts. Since the four actors were working with each other, there was need to develop a common vision and a spirit of partnership amongst them. Each actor had their own biases based on their earlier experience and therefore one of the key roles that DSC played was to bridge the trust gap between the different partners. It was also necessary that the terms of engagement between different partners DRDA-PIA-Community be clearly defined. Thus, DSC helped

the DRDA's to develop a Memorandum of Understanding between them and the NGOs. It also worked closely with the State Rural Development Commissionerate to set up various Committees for reviewing the programme and providing overall guidance, for monitoring and evaluation and for providing capacity building inputs to various stakeholders.

Since the actions or in-action of each partner had a direct/indirect impact on the other, DSC tried to address the support needs of the four different partners. These were very varied and led DSC to develop different interventions that would lead to strengthening this support. In order to lend legitimacy to its capacity building inputs to NGOs and line departments such as the Gujarat Land Development Corporation and get a hands on experience, DSC decided to become a PIA initially in Amreli (Non-tribal) and thereafter in Sabarkantha (tribal) districts of the state. To create awareness amongst the rural communities and the Watershed Development Team members, it developed print and audio visual material. There were certain issues that came up during implementation, support and engagement with policy makers that needed to be studied further and therefore DSC initiated research and documentation in a structured manner. Thus within three years of its inception DSC had developed the practice → knowledge → policy framework. Based on the experience gained as a Support Organisation, it played a major role in developing the guidelines for the watershed development programme supported by the Council for Advancement of People's Action and Rural Technology (CAPART). These guidelines emphasized the need for a Training and Support Voluntary Organisation (TSVO) for quality implementation of the watershed programme. After almost five years of implementation of the watershed programme by the PIAs a need for carrying out Watershed Plus activities and consolidating the gains of the watershed programme was felt. This led to the formation of Sajjata Sangh a Network of NGOs that would build their capacities to carry out activities related to input supply, marketing, formation of federations etc.

Parallel to the watershed programme, the state government on June 1st, 1995 introduced the Participatory Irrigation Management (PIM) programme for irrigated areas. Alike the watershed programme this too demanded a change in the mindset of the two main actors – the staff of the water resources department at the project level and the farmers in the command area. Here too unlike other states, the Government of Gujarat adopted a bottom-up approach. It first focused on developing 13 pilot projects across the state through voluntary efforts of the farmers. It invited their participation in the rehabilitation of canals and water distribution through the formation of Irrigation Co-operatives (ICs) or Water Users Associations as currently known. The government also invited the NGOs to organize the farmers in the command areas of irrigation systems, facilitate WUAs and build the capacities so that they could collect water charges, rehabilitate the canals and carry out water distribution from the minor canals. However, unlike the watershed programme wherein there were many NGO PIAs, in PIM except for AKRSPI which had already initiated PIM in South Gujarat, not many NGOs showed interest. Thus, DSC decided to take up implementation of PIM projects in three irrigation schemes namely Dharoi in Mahesana district and Mazum and Guhai in Sabarkantha district. As in watershed this led to development of communication material and conducting research studies related to tail end deprivation, benefit- cost of PIM etc. However since there were no guidelines for engagement of the WUAs or the NGOs, DSC worked closely with the Narmada and Water

Resources Department for developing procedures which enabled effective participation of WUAs in the management of canals. This led to a series of orders being issued by the government which are quite unique in the country as they not only helped farmer's participation in management of irrigation systems but also in developing robust WUAs. Later some of the Government Orders were also incorporated by the Sardar Sarovar Narmada Nigam Ltd (SSNNL) when the organization initiated PIM in its command area.

Based on the needs expressed by the village institutions and the federations that had primarily worked on creating better infrastructure through land, water and canal management in rainfed and irrigated areas, the organisation developed a full fledged "Watershed plus" and "PIM plus" programme that looks at productivity enhancement, cost reduction, risk mitigation, value addition and market linkages. Realizing that the needs for drinking and domestic use of water were not being addressed, the organisation also intervened in these areas. In order to scale up interventions related to capacity building in PIM, DSC collaborated with the Water and Land Management Institute (WALMI) for providing inputs to WUAs, NGO staff and field officers of eight irrigation schemes in the state. After having worked for about 15 years in Gujarat, DSC felt the need to test the learning in other states also. DSC in 2009 initiated PIM in the Maan and Jobat projects of Dhar district of Madhya Pradesh. In Nov 2011 it also initiated the Integrated Watershed Management Programme in M.P.

This journey of assessing the needs of the stakeholders, trying out new models of participatory extension, institution building, technology development and management, documenting and disseminating information on existing or new practices and the continuous engagement with policy makers has been quite exciting. Many lessons have been learnt during this process. The present volume tries to capture these through illustrated cases. The primary criterion for selection these cases was the impact on outreach in terms of changes in practice at the ground level or changes in terms of procedures/policies at the district/state/national level. The experiences of Sajjata Sangh the Network initiated by DSC have been documented separately. We hope such this documentation would be of interest to practitioners, trainers as well as policy makers.

The journey could not have been possible without the support of many individuals and organizations. Believing in an organization and supporting it in the initial stages for trying out new ideas is rare. DSC has been fortunate to have donors such as the Aga Khan Foundation, the Ford Foundation, the National Dairy Development Board, the RBS Foundation, CAPART, NABARD and the state and central government who not only helped in piloting certain ideas but also scaling up the same.

Sachin Oza

Executive Director

Development Support Centre

CASE SYNTHESIS

Practice, Promotion and Policy Advocacy: The Three Pillars of Development

Nabarun Sen Gupta

The seven cases included in this book authored by experienced personnel from the Development Support Centre provide interesting insights for development practice, especially towards promotion of livelihoods for the poor through participatory natural resource management and agriculture development. The cases reflect a diverse and rich grassroots knowledge generated, developed and disseminated for capacity building of stakeholders on one hand and informed policy influencing on the other. Standalone or put together, these cases remind the readers of the importance of designing interventions in a way that provides adequate space for communities to participate and build their institutions. The cases also suggest that external facilitating agencies, especially civil society organisations, must be careful about programme design so that it creates enough space for convergence, collaborations and capacity building of stakeholders, and more importantly, for adapting and re-designing of the interventions as and when needed along the journey.

Some cases discuss aspects of program implementation while others focus on the policy advocacy efforts of DSC. The cases, *Harnessing Local Potential* by Nayana Choudhary, *Rejuvenating Natural Resources: Rejuvenating People* by Swomya Prakash and Green, *White and now Blue* by Manu Vadher and Rajendra Patel reflect on the experiences of designing and implementing interventions with active involvement of the target population. The case on Basic Training Course *Contemporising Watershed Education* by Gordhan Katariya discusses the processes in designing and redesigning stakeholder capacity building while the case of *Joining Forces: Making a difference* by Dipak Rawal and Bhagirath Sathwara argues for engagement and collaborations with state lead agencies such as WALMI, Gujarat. *Thrust on Thirst* by Manju Ravi focuses on policy influencing for prioritising drinking water as part of watershed development. In my view, each of these cases has some relevance for policy engagement by NGOs for promoting wider practice and replication of good practices witnessed on a small scale. In this context, one must appreciate the strategic use of the DSC's learning in the important area of policy influencing. The case of Participatory Irrigation Management (PIM): *Joining Forces: Making a difference* is about achieving scale by partnering with WALMI, a state agency entrusted with the responsibility of building the capacity of stakeholders across the state. DSC, very strategically, entered into an alliance with WALMI to discharge its core function. Collaboration with WALMI, over the last two and half years, has shown that programme reach had been far higher than what DSC could have achieved by working on its own.

The second case on PIM: *Green, White and now Blue* describes the process of designing and implementing interventions where people's participation is at its highest level of self mobilisation. The approach establishes a farmer's institution, where in spirit, farmers are in the driver's seat in every decision-making process. Not a single instance is seen where the process was top-down. The managers of the intervention made it a point to dialogue with the community and discuss solutions to every issue, be it on the rules for water

distribution or irrigation-cess, or penalty against errant members and so on. As the case unfolds, one does see that within the interventions, there were efforts as well to bring about changes in the policies of the government departments. For instance, issues which were understood as “technical” matters and hence “sanctified” also underwent thorough review and due modification according to the farmers’ simple understanding of *what should work*. As noticed, the engineers accepted the proposed changes when a win-win scenario was presented to them. These successes were possible because DSC was persistent with the chosen participatory approach and worked to nurture partnerships of “mutual respect” with the stakeholders. Another case on Irrigation management i.e. *Harnessing Local Potential* is an intervention that has an element of innovation. What, according to conventional wisdom, was understood as technical work done by professionals was challenged through an initiative of building capacity of selected farmers by engaging them to perform roles traditionally confined to “professionals”. Based on their inherent strength of a practical understanding of farmers’ institutions, DSC actually increased the pace up of the process of delivery (more water users cooperatives were established within the limited period). These cases describe of the efforts of DSC in bringing about necessary changes in the Legislations, Acts and government orders to facilitate promotion of farmer-managed irrigation systems. Further, DSC transferred learning from this long engagement with irrigation management into the classroom as well. The experience from grassroots implementation was converted into learning modules for building the capacity of irrigation department employees and office bearers of the irrigation cooperatives. This is described in detail in the case of *Joining Forces: Making a difference*. To sum up, the essence that one derives from these three interventions is how a development agency needs to engage in the successive levels – practice, policy and knowledge.

Livelihood Promotion through Watersheds

There are three cases narrating interventions on Watershed Development. Though all these interventions happened more or less around the same time, they did not occur in isolation. They drew heavily from each other’s learning and fed on each other’s strength to collectively address the larger issues.

The Case *Rejuvenating Natural Resources: Rejuvenating People* establishes the importance of participatory processes in designing interventions and the primacy of people’s institutions in dealing with designs and implementation. It discusses the difficulties that any soil and water conservation practitioner would encounter and also the strategies employed to make people accept knowledge and thereafter move on with the implementation. The case provides a few important sets of learning for practice. The institution-building process of people’s collectives, should be the core of such interventions and the role of any outsider agency must be that of a facilitator which provides guidance, not directives and helps develop and not impose systems. These are important parameters that must be considered even when it comes to the Integrated Watershed Management Program. Often, engagement of outsiders with little knowledge of how the community behaves and little exposure to development perspectives can lead to a colossal wastage of resources.

The case on Drinking water *Thrust on Thirst* draws heavily from the learning of many

other similar efforts in Gujarat and elsewhere. While planning for soil and water conservation efforts, practitioners realised that while the methods adopted by them helped in conserving water, aiding farming and increasing production and thereby income, these efforts missed the important agenda of securing drinking water requirements of human and animal population. Interestingly, under the Hariyali Guidelines in Gujarat, the watershed programme prioritised drinking water issues and focused interventions on drinking water were carried out with agencies including WASMO. DSC took this opportunity to demonstrate the efficacy of convergence of watershed interventions and drinking water as it implemented the work with its partners and at its own watersheds. The learning paved the way for further refinement of the policies, which were also demonstrated through small efforts aimed at improving coordination between the implementing arms of the related departments.

The case *Contemporising Watershed Education* is about taking the knowledge gained through practice to inform and improve practice. The Basic Training Course that was contemplated in the initial days of DSC as it embarked upon the path of becoming a support institution, underwent several revisions on what a practitioner must do and how could he/she do to make things better. The sector required human resources which were not readily available. The educational system did not somehow respond to the emerging need of professionals who would directly work with the community. There were institutes like IRMA and Schools of Social Work who did provide some professionals, but they were more suited for the middle level management. Such graduates also needed a field orientation as many of them are quite removed from field reality. It was this requirement that the BTC was able to address well. The BTC also was responsive to the dynamic nature of the demand. The course helped professionals imbibe some very specific sets of principles of working and also the most needed aspect of “perspective” that helped them interact with the community. Today, the BTC course is a very strategic one - all soil and water conservation programmes - be they state run or run through international grants have their staff members attending the course and developing the edge that is needed to make them more efficient.

One realises that even in the case of livelihood promotion through watersheds, DSC has made a complete circle touching the entire horizon-practice, theory and policy. Needless to say, the three pillars worked in tandem, each fitting in with specific inputs to make practices work for the best.

Moving Beyond the Conservation and Rehabilitation Domain

Many of us have often heard this - ‘What next with regard to Watershed Development and Natural Resources Management?’ It seems many have been pondering with the issue of “what next”. The case on Jal Vikas Se...’ throws some light on this. It has proved that even though enough work may have been done for soil and water conservation, the development work seems to have another phase to go for, stepping up from outputs to outcomes, which are of relevance to life and livelihoods of the target population. The agriculture which is now guaranteed water must move to the phase of increased production. DSC realised that with inputs becoming costly and seeds sold in the market being of doubtful

quality, a way out would be to have farmers' own institutions producing seeds, carry out necessary quality checks and sell them back to their own members. The entire process of managing a community enterprise run with the sole purpose of benefiting a large part of the community, not just a few individuals has been described in the case. This intervention seems to be a new domain and probably an area which is not traversed by many. But it is certainly a domain that is likely to gather interest soon. It may however, require long term engagement with the community and building a people's institution with clear objectives and vision.

Conclusion

The seven cases have discussed the basic idea of ensuring peoples' participation and the formation of community-based and community-owned institutions. The processes and structures adopted to ensure that people are at the centre of decision making are a crucial element in all the interventions described in these cases. DSC has taken this learning, and consolidated it to undertake suitable policy interventions wherever needed to improve practice and remove the policy bottlenecks for development practice. DSC has also been able to incorporate many of these learnings from the field into training modules for practitioners. It has developed partnerships with state lead agencies to take these modules to scale for impacting large numbers of livelihoods. The loop of practice to theory to advocacy was addressed in succession, but in almost all instances, the organisation made a conscious effort to make them an integral part of the design of the intervention processes. Let us see how these cases written and presented by practitioners belonged to DSC have described these insights in this compilation *Experiences of Livelihood Promotion: Learning from the field*.

CHAPTER 1

Green, White and now Blue

The Revolution Triad

Manu Vadher and Rajendra Patel

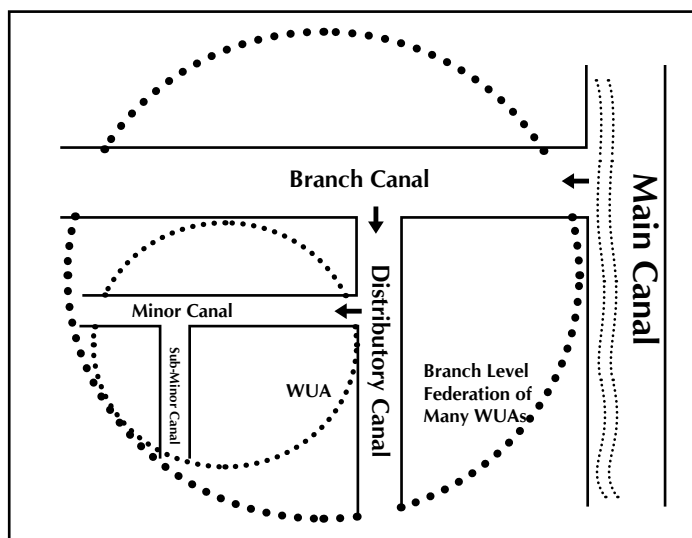
Introduction

More than half of India's population derives its livelihood from agriculture. Since independence, the country has made huge investments in infrastructure, especially in irrigation schemes, to help augment this sector. When Gujarat was carved out as a separate state in 1960, the state government saw immense growth potential in agriculture and prioritised the development of plans that invested hugely in irrigation projects. Between 1960 and 2001, the Government of Gujarat invested around Rs. 5,000 crores in developing canal irrigation in the state¹. As a result of this investment, the state has 18 large-scale irrigation schemes (each having a command area of more than 10,000 hectares), 90 medium-scale irrigation schemes (having irrigated command of 2,000 to 5,000 hectares) and around 5,000 small-scale irrigation schemes (each with a command area of less than 2,000 hectares). These investments created an irrigation potential of around 2.1 million hectares. With another 1.8 million hectares of land under irrigation from the Narmada Scheme, the total irrigated area has now increased to 3.9 million hectares. Almost 40 percent of the total 9.75 million hectares of agricultural land in Gujarat has been brought under the flow irrigation system. However, officially designating areas as "irrigated" and ensuring irrigation water actually reaches those fields are two separate issues. A large part of the command areas in most irrigation sites across the state suffered from tail-end deprivation².

One of the reasons that could be attributed to this was the failure to involve people in the planning and implementation of these schemes. Farmers were not involved during the design phase, nor were they involved when construction happened in the branch, minors and sub minor canals. Construction works in irrigation projects were contracted out to private entities, who because of their target-based approach, finished their tasks without proper consideration to quality. Added to the issue of poor quality of infrastructure was the inability of the irrigation officials to ensure equitable distribution of the water. Though dams and canals were built, resources required for their maintenance came from the Narmada Water Resources, Water Supply and Kalpasar Department (NKD) but were available in limited amounts. Over the years, the condition of these canals deteriorated and in many places they obstructed the flow of water to the fields. The patch work style of repair which the NKD performed with limited funds at its disposal worsened the situation. In the absence of an institutional framework, irrigation officials dealt directly with the farmers. These were mostly one-to-one interactions and consequently those farmers with clout received water and those who did not, were denied the benefit. In most cases, it was the farmers in the head region who received the water and those in the tail end were deprived of it. Due to the apathy of the NKD and the lack of water, farmers refused to

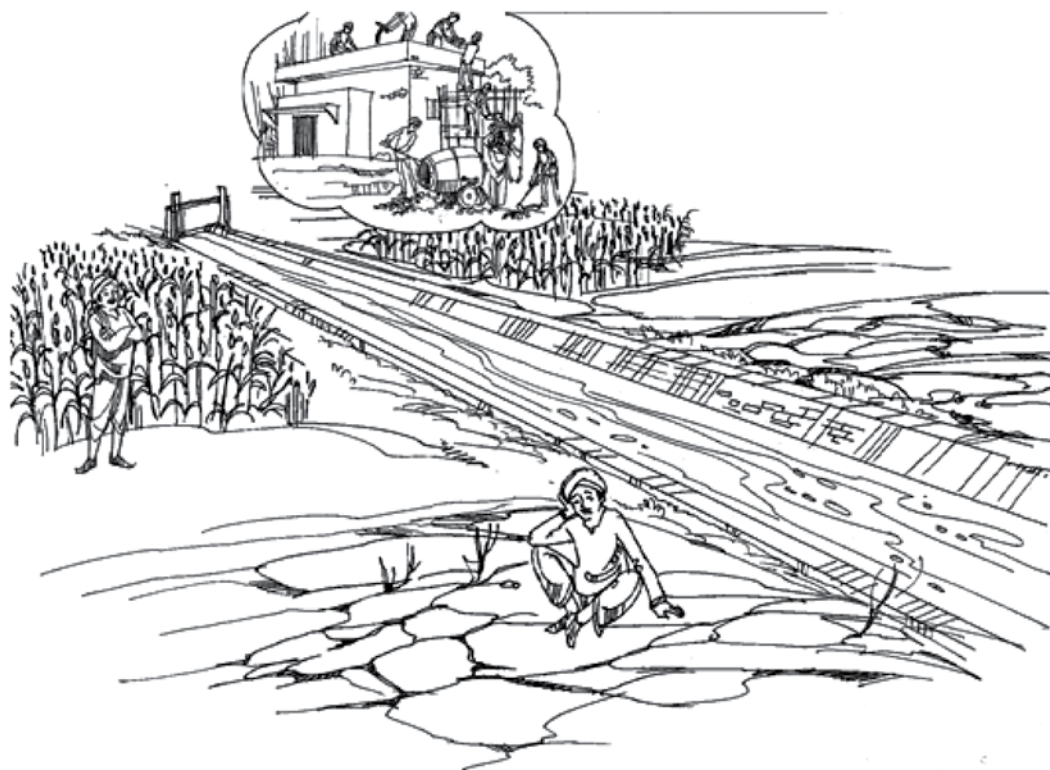
pay taxes. These reasons made canal irrigation an extremely troublesome issue for the government.

Figure 1: Canal Irrigation Structure



Context

During the early nineties, the Aga Khan Rural Support Programme, India AKRSP(I), under the leadership of Shri Anil Shah, piloted a model of canal irrigation with farmers' groups and achieved good results. Development activities in minor irrigation projects of Pingot and Baldeva of Netrang Block in the then Bharuch District (now Narmada District) led to the realisation that a farmer-centric, participatory approach would result in more efficient management of canals and equitable distribution. Under the stewardship of the Chief Engineer of the NKD, a government order was taken out in June 1995. The order provided impetus and direction to all irrigation schemes to involve farmers in decision making on issues of water distribution, water cess collection, laying down of sub minors and other water distribution issues.



Armed with this government order, DSC intervened in the Dharoi Irrigation Scheme in North Gujarat and selected Thalota village to pilot its first major intervention in irrigation water management. The situation of Dharoi was no different from the other irrigation schemes of Gujarat. The scheme had a total command area of 48,000 hectares and around 127 villages were to benefit from it. However, till 1994, the maximum area that was brought under irrigation was only around 18,000 hectares. Poor quality of construction work in the canals, gates that were either missing or were never installed and excessive length of the minor network plagued the water distribution system. The *Sejpali* system, i.e. water being given from the head to the tail, resulted in the poor delivery of water. Some farmers took more than their fair share but most did not receive any share of the water. Some received a little water at the beginning of the season but not towards the end of the crop season. There were issues of water logging as a result of which large tracts of land became unusable. Most farmers who did not receive water towards the end of the season refused to pay the cess. DSC was aware of these challenges, but also certain that once the farmers were mobilised to develop their own systems of water management, they would be in a situation to bring about the desired change. Within this context, DSC initiated its pilot project in Thalota village.

Intervention

During the first month of its engagement in the pilot project, DSC undertook an in-depth study to examine demographic features, existing institutions, status of the infrastructural

facilities and status of agriculture and irrigation in the village. The study also attempted to understand local-level social dynamics, leadership patterns and the status of cooperatives in the village. Information was gathered through tools like one-to-one interactions with individuals, focus group discussions and participatory rural appraisal methods. Since the study aimed to understand the available irrigation sources within the village, it assessed the difficulties encountered by the farmers at different sections of the canal - the head, middle and tail end. Critical elements of the findings which had a bearing on the intervention are highlighted in Box 1. It was evident from the study that the farmers in Thalota had been struggling with a complex set of issues for a long time.

Box 1. Findings of the Study on Thalota

1. About 80 percent of agricultural land in Thalota depended on the canal for irrigation.
2. A major portion of the canal was in a depleted condition.
3. In the head reach of the canal, the land was water logged due to seepages and excessive irrigation.
4. Farmers having land in the tail end do not get enough water and sometimes it takes 3-4 days for irrigating a land that is only about one hectare.
5. The water logged land suffered from growth of weeds, which made it difficult to carry out any agricultural operations.

When DSC started approaching farmers, the villagers assumed that the DSC staff were employees of the NKD. With water cess over due for years, most farmers were unwilling to discuss issues related to the canal. It took a few months to set this misconception right. After several rounds of discussions with DSC staff, farmers suggested that the canals be repaired first and then gates be installed at different places within the canal network. DSC encouraged farmers to become “owners” of their decisions and suggested that financial and voluntary labour contributions (through *shram daan*) be made by farmers.

Next, DSC showed the film “*Chalo Uthavo Bidu Khedu*” to inspire the farmers about participatory irrigation management (PIM) and encourage them to contribute towards the revival and rehabilitation work. This film is based on the experience of the successful Ozar Irrigation Scheme in Maharashtra. Although the film inspired the farmers, there were mixed responses. Some agreed to the possibility of working on the issue whereas others believed that while it was a good and appreciable effort, such work could be done only in Maharashtra but not in Gujarat. There were others who felt that it was just a film and like all films did not depict the real situation. DSC wanted these fence-sitters to see the action being unfolded in Gujarat. Both farmers from the upper reaches of the canal, who were not in favour of farmer cooperatives, as well as leaders of the villages who had shown interest in the farmer cooperatives, were taken on an exposure visit to Pingot and Baladva projects in Netrang, where AKRSP(I) had successfully promoted PIM. The exposure served as an eye opener for many. The idea was finally accepted and the farmers resolved to act on it.

Once farmers were ready to work together and find a solution, support from the NKD followed. The general meeting of the farmers resolved to start the process of formation of a water users' cooperative according to the cooperative guidelines of the NKD. The process of becoming a member of the cooperative was outlined in the sub section on PIM. A fee of Rs. 50 per acre was decided as share fee and another Rs. 5 as membership fee. Once the decision was accepted, the collection was made quite quickly. Within two days, more than half of the farmers owning land in the command area had paid their fees and share capital. The paperwork to initiate the process of registration was completed as according to the model guidelines for irrigation cooperatives. The process of registering the cooperative, however, proved to be a struggle. Cooperatives are usually registered at the district level office of the Registrar of Cooperatives. However, this office, which wielded a lot of political and administrative clout, delayed the process. The file for registration was sent back and forth several times. Each time, the office found gaps in the paper formalities to deny the registration. It was only after efforts at the level of the State Registrar for Cooperatives at Gandhinagar that a government order was released directing for speedy disposal of such registration requests. It took almost nine months for the first cooperative to be registered.

While the registration of the cooperative work was in progress, rehabilitation of the canal had begun. Farmers and NKD staff undertook a joint survey for resolving the issues relating to the canal, which included preparing the map of canal rehabilitation and cost estimates. Cooperative laws required a 10 percent farmer contribution for repairing the canal, which confused the farmers, who assumed that their share capital was their contribution. Since they did not own the canals (land compensation had already been given to them), they should not be expected to pay for its rehabilitation. The exposure visits and film shows helped them realise the significance of their expected contributions. DSC also undertook an analysis of the costs that farmers would incur and the benefits accruing to them as a result of this intervention. When the farmers realised that the benefits were several times higher than the costs, they agreed to contribute.

Next, there were discussions on how to collect the contribution. Some suggested paying at the time of irrigation while some suggested labour contribution. However, the Patel community, which was in the majority and also economically well-off, was unwilling to work as labourers. After much discussion, the farmers decided to make a monetary contribution of Rs. 300 per hectare of land in the command area. Since the Thalota cooperative was not registered at that point, DSC received the grant from NKD on behalf of the cooperative. According to the MoU, DSC started to rehabilitate the canal but took the informal cooperative into confidence in both decision making and financial transactions. This gesture built the confidence of the farmers and laid the foundation for a healthy partnership.

Even as the construction progressed, farmers expressed doubts about the technical aspects of canal construction. To address this, DSC understood formed and trained several farmers' committees including the construction committee, material purchase committee and accounts committee to monitor and manage rehabilitation activity. Through these

processes, farmers were able to shed their inhibitions and their sense of ownership over the canal increased. Soon the canals and their respective irrigation cooperatives were ready to enable the water to flow down to the farmers' fields. DSC's success in this task owed immensely to a small policy change brought out by the Government of Gujarat at that time - granting the implementation of technical work of PIM to NGOs and cooperatives. The time was ripe to establish a few simple rules that would reduce conflicts.

Water distribution had been a major issue in the past as well. Two MoUs - one relating to canal rehabilitation and the other for management of water distribution in the canal system were signed between the government and the cooperatives. The latter, in turn, developed the rules in a general meeting (See Box 2 below).

Box 2: Rules of Water Distribution

1. Membership is open to those who have land in the command.
2. Farmers are eligible for getting water for irrigation only if they fill up the membership form.
3. Women farmers who are single will receive water during the day time.
4. Farmers can receive water only after receiving the gate pass from the operator.
5. During the rotation of water, if the farmer is caught taking water two times then s/he will be penalised a sum of Rs.400. The penal amount will be doubled if the farmer is also a committee member.
6. Cost of damage to the canal infrastructure will be recovered from the farmer who does the damage.
7. Farmers who are caught wasting water will have to thereafter abide by the decision of the justice committee on this matter.
8. Before the initiation of irrigation, an Annual General Meeting (AGM) of the members of the irrigation cooperative will be organised.
9. The secretary will draw a salary based on the repairing work undertaken by the society.

The Executive Committee of the cooperative met on a month while the AGM was held once a year in which the budget for the year was presented. This included an estimation of the expenses for water distribution, cleaning the canal, the secretary's salary and payment of water taxes. During the first year, the rate of water tax was fixed at 25 percent above the government rate. The NKD allowed cooperatives to retain the additional tax above the government rate to allow them to meet the above expenses besides giving them a 50 percent discount in the tax they deposited with the department. While it was difficult for farmers to accept a burden of an additional 25 percent, they were willing to do so.

According to the Cooperative Act, the Executive Committee of the cooperative needed to have at least three women members. However, merely their membership in such committees was not sufficient unless efforts were made to make them owners and decision makers. DSC set out to encourage the involvement of women in decision-making forums as a result of which, a long standing need for provision of exclusive bathing and washing ghats along the canals for women could get addressed.

Water operators who managed rotation of water received technical inputs from the DSC team and the NKD staff, which included training on calculation of time required for irrigating different agricultural field sizes, crops and soil types. Changes soon became evident. Earlier, water did not reach the tail end fields even after fifteen days of continuous flowing. It sometimes took over 36 hours for irrigate a hectare of land. As a result of this intervention, the process takes half the time. There are instances of tail end farmers receiving water on the very first day itself. Farmers who had opposed this arrangement were soon impressed. Many of them were ready to pay double the amount and those who were not willing to pay their contribution towards the rehabilitation work now paid up.

Since then, the farmers' cooperative has been involved in the repair and maintenance of the canal. It receives funding from the repair grant earned from the irrigation cess that it collects and deposits with the state exchequer. The story of PIM work in Thalota took no time to reach the neighbouring villages and soon many other villages expressed willingness to work on the same model. Other organisations also promoted this model in the upper, middle and tail reaches of the other canals of Dharoi. In short, this small beginning at Thalota gave birth to the new Blue Revolution in Gujarat.

The experience at Dharoi paid great dividends to DSC. Following this success, the Sardar Sarovar Narmada Nigam Ltd. (SSNNL) approached DSC to work on the Narmada Canal Project, where the Vehlal cooperative society had failed to involve farmers in operating and managing irrigation facilities. There were conflicts at both the farmer and institution levels over the distribution of water. Some farmers in the head reaches were received sufficient water whereas those in the middle and tail ends were deprived of water. Thanks to DSC's experience in Dharoi, the Vehlal Cooperative was soon on the road to recovery.

DSC initiated an in-depth study to understand the reasons behind the conflict. The study revealed that canal was designed in a way to facilitate the working of 10 sub minor canals at any given time. The irrigation system assumed a mono-cropping pattern with the understanding that all the farmers sowed their crop on a single day. However, in reality, farmers grow different crops on their fields because of which sowing rarely takes place on the same day. Therefore, irrigation is required on different days. This had upset the design and led to conflict between the farmers. There were days when no irrigation was required and days when many farmers required irrigation at the same time. As a result, Irrigation Engineers often left decisions to farmers and their institutions.

DSC discussed these issues with farmers' institutions initially decided that the solution lay in supplying water through a set turn as in the *varabandi* system. However, the *varabandi* system required running sub minors in rotation with gated structures. However, the canal and the sub minors of the Narmada canal did not have these structures.

The farmers were taken to on an exposure visit to the Kiyadar cooperative of the Dharoi scheme, which practiced the *varabandi* system and had installed gated structures to deal with the situation which was similar to that of the Narmada canal at Vehlal. The exposure visit enabled farmers to realise that similar structures were needed at the mouth of the sub minors to regulate the flow of the water from the branch canals. This construction required permission as well as financial support from the Narmada Corporation (each gate would cost Rs. 1,000 to construct). With the Narmada Corporation showing little interest in providing support, committee members of the cooperative contributed towards the amount. The society passed its solution for putting up gates at the mouth of the sub minors and at places on the sub minors where they branched out into smaller field channels. A local artisan constructed a gate that was flexible enough to increase, reduce or stop the flow as needed. The gate could be kept open at different degrees to allow water to flow as much as required. The gated structure had the potential to increase water flow from 15 percent to almost 90 percent of the capacity.

After constructing the gate, the Cooperative approached the officials of the Narmada Corporation to construct gates at other locations too. The officials refused saying that it was impossible to change the design and refused to build the gates. In addition, they asked the cooperative to dismantle the structure that had been installed. The cooperatives refused to do so and again, with two members providing financial support, two other gates on two other sub minors were installed, which made it possible to further moderate the flow. DSC then convened a meeting with officials to share this experience and invited senior members to visit the site. Officials were impressed with the work and approved the request for putting up more gates on the remaining sub minors. The cooperative thereafter commissioned gates at every eight hectares "sub chak" and readied the system to supply water to 82 farmers in the 60 hectare area at the tail end of the branch canal. The system worked to the advantage of all the farmers and the conflict that prevailed only a year ago soon became history. The cooperative spent a sum of Rs. 40,000 for putting up these gates, and the amount was later returned by the Narmada Corporation.

This experience of farmers designing locally suitable structures and implementing corresponding institutional processes is now being replicated in all the Narmada canals. From 1995 to 2004, a total of 40 irrigation cooperatives were formed covering about 12,000 hectares of the command area. These cooperatives undertook canal repairing and even installed gates with lock system in many places - all these efforts helped irrigation water reach farmers at the tail end. In 1994, irrigation in the command area of Dharoi reached 18,000 hectares which increased to 28,500 hectares during 2009-10 - a net increase of 10,500 hectares. This increase has helped over 6,850 marginalised farmers - 3,200 for the first time - in the tail end area to receive water.

However, as the irrigation progressed, complaints from farmers in the tail end against the misutilisation of water increased, and needed to be addressed. DSC and the NKD were aware of the new systems installed by irrigation cooperatives in Maharashtra. For instance, the cooperatives of Ozar in Maharashtra practiced the system of volumetric water pricing, which the farmers of Dharoi had witnessed during their visits. In 2004, an exposure visit to the Ozar cooperatives was organised. Two office bearers from each cooperative in DSC's area were taken to Ozar, where they learnt about the volumetric approach³ to water pricing. On their return, they translated this learning into practice.

In 2007, DSC convinced representatives of five cooperatives in the upper, middle and tail areas of the villages of Kahtoda, Gunja, Chabaliya, Dedasan and Rangpur to install volumetric structures. The NKD also provided the necessary technical guidance on this matter. Good quality fibre structures for volumetric measurements were purchased at a price of Rs. 30,000 each and installed with support of the cooperatives. However, the very next day the farmers of Dedasan and Kahtoda village began to oppose the installations. They alleged that the structure was narrow at the middle and hence would not allow enough water to flow into the sub minors to reach the tail end. Two of these structures were also damaged in a scuffle when a few villagers tried to dismantle the structure. It was only after the DSC team and some office bearers pacified this group that an amicable agreement was reached and things were settled.

The NKD promised that it would not stop the water till the last farmer received his/her share. Normally, officials stopped the flow on the 13th day of the irrigation cycle by when most of the fields in the command area are usually irrigated. Those who opposed the volumetric approach (since they believed it would reduce the water flow) were allowed to experience the flow at a distance of three yards from the outlet where the volumetric device had been installed to view first hand that the device did not cause reductions in water flow. DSC was certain that such opposition would soon die down when farmers realised that the structures were not hindering the flow of water. Volumetric structures also proved a boon in helping farmers measure the exact time required to irrigate a hectare of land - something that they had been unable to predict accurately in the past.

Once these structures were in place, the DSC team and representatives from the cooperative recorded details of water passing through the gates every hour. The secretary of the cooperative maintained a water reading register, which was duly signed by the operator and an official from the NKD to maintain the credibility of water measurement. This helped the cooperatives establish the fact that the structures had led to more efficient water use. The government had a norm of 16-17 duty - meaning a million liters released from the dam would irrigate 16-17 hectares of land. The measurement of water released through the volumetric structures revealed a duty of 21, which was about 22 percent over the prescribed duty norms of the NKD.

Around 750 farmers belonging to different irrigation cooperatives from Vehlal (Ahmedabad District) and Bhadar (Rajkot District) and other parts of Gujarat were taken on exposure visits to observe volumetric structures already in operation in Kansa and Kahtoda villages

in Visnagar and Vadnagar Blocks respectively of Mehsana District. Today, farmers pay for water on an hourly basis - and not for the entire season - for water. Farmers have realised the value of water and are keen to save it as well. This initiative was further boosted through the establishment of 192 cooperatives in the command area of Dharoi. Currently, the entire command area of 48,000 hectares is under one of these 192 cooperatives. Three federations have been formed under the scheme. The intervention is a model for other irrigation projects to learn from and emulate.

Outcome

The pilot in one village was successfully scaled up and now the entire command area of the irrigation scheme plays a significant role in the PIM. The intervention has the following outcomes:

Even farmers at the tail end are confident of getting their share: For the first time, water reached the farms of over 3,000 farmers in the tail even though the distribution network was in place earlier as well.

Every drop counts: Previously, there was no control over the water available for irrigation. But under the present system, volumetric measurement devices have been installed to measure the usage of water. This shift has been worth the investment. Earlier, it took farmers 36 hours to irrigate one hectare of agricultural land. Now, farmers are able to do so in about four hours, saving both time and water.

The administration supports and works with the farmers' institutions: Farmers manage water distribution in its entirety following the systems developed through mutual discussion and in agreement with NKD officials. They possess the keys of the outlet and the gates open and close according to water requirements. Farmers who need water collect the keys from the cooperative. Collection of the irrigation tax has been streamlined since is now based on the number of times the water is taken rather than on the season. This has made for 100 percent collection of irrigation tax, of which 90 percent is paid in advance by the farmers. Conflicts over water distribution have reduced. Of the 32,925 farmers in the entire command area, 26,340 or 80 percent of the farmers are members of the cooperatives today.

Farmers' institutions are cash rich: Farmer institutions have generated high revenues as a result of the 50 percent rebate allowed on water tax to be paid to the NKD by the cooperatives as well as the additional tax rate agreed to by the cooperative members. According to a study carried out by DSC in 2007, the cooperatives collected total irrigation charges of Rs. 9.137 million out of which they paid Rs. 2.91 million to the NKD. The next year they paid Rs. 3.364 million but collected Rs. 10.334 million. The additional enabled them to undertake canal development and maintenance on a regular basis.

“Dudh Ki Nadiya Baheti Hai” (River of Milk Flows): The assurance of irrigation has boosted farmers’ income from agriculture. Many farmers have reinvested the returns in animal husbandry since they are now assured of fodder availability. The number of milch animals has increased from 52,104 in 1995 to 65,122 in 2007. Records of milk cooperatives falling under the Dharoi command area reveal that as of March 1995, the total collection was 1,64,835 litres. By March 2008, the collections showed an increase of almost 49 percent. Around 2,45,135 litres of milk is now collected every day from these villages.

Unity has made farmers stronger: The process of collectivisation has strengthened cooperatives. A federation in Dharoi's Branch 2 canal was set up with 17 villages irrigating over 7,100 hectares of land. The federation has taken up reconstruction work of this branch canal and takes decisions on water rotation. Working together has helped ensure equity in water access. Inspired by these developments, the other two branches (1 and 3) are contemplating having their own federation as well.

More women today are in decision-making positions: Women who are normally have been behind the veil in this patriarchal society have today found a voice. As practical gender-needs like bathing and washing ghats along the canals were addressed, women realised that participating in decision-making would increase their benefits. They came together to raise demand the right to irrigation water and water during the day hours. Currently, there are 871 women who are members of the irrigation cooperatives.



“Jyot se Jyot Jalate Chalo”(Light the Torch from Another Torch): The success of PIM has made Dharoi a learning and exposure site for irrigation professionals and workers and leaders of NGOs and PIM cooperatives from Gujarat and from across India. The scheme has been visited by international delegates from countries like Nigeria, Sudan, Ethiopia, China, Pakistan, Australia, USA and England. Till date, more than 7,500 participants have visited this scheme over the course of 300 exposure visits, which village institutions and the federations have handled with ease. A film on the Kiyadar Cooperative has been dubbed in Hindi and English and is used as educational material. The torch of Dharoi has lighted many and is likely to inspire many more in the years to come.

Learning

Farmers’ institutions have played diverse roles like transferring management rights of the irrigation canals, mobilising farmers to manage the water distribution, collecting the irrigation cess, design, installing and repairing the structures and mediating during conflicts of water distribution. Some of the learning which emerged from the Dharoi experiment that practitioners involved in similar processes elsewhere can consider are discussed below:

Outsiders have to be the sounding board: When DSC first tried to reach out to the farmers, they faced resistance since farmers assumed that another contractor had come to talk to them. Most farmers were unwilling to work together. Such pessimism, perhaps even anger, prevailed among the farmer community as a result of years of frustration about lack of irrigation water. Through several rounds of discussions and meetings, DSC was able to gain their confidence. Once the villagers realised that they were in a position to identify and address their own development concerns, (which is the very genesis of DSC’s approach), they decided to deal with the issue collectively.

It may be difficult for farmers to contribute resources for reconstruction, but not impossible: DSC engaged the farmers conducting an analysis of the benefits that participatory water distribution and irrigation would allow, which revealed the potential for a substantial increase in area under agriculture, thereby improving incomes. This convinced the farmers to make investment in reconstructing and rehabilitating the canals. Most of this contribution was made in the form of labour. The ratio of people’s contribution varied between 10 and 20 percent with the rest coming from the government. This sharing of the cost worked wonders. Involved farmers became the owners of the system - if not *de jure*, at least on *de facto* basis.

Exposure visits made the difference: Exposure visits to successful areas, and preferable were invaluable for this transformation. After witnessing the success of the Thalota cooperatives, others farmer cooperatives were inspired to initiate similar efforts. DSC’s investment in establishing farmer participation as a reality, and not just rhetoric, has yielded significant results.

Support from the government is invaluable: The government provided Rs. 50.48 million in Dharoi and another 45 million to the Vehlal scheme to ensure that water reached

tail end farmers. Farmers gain confidence after seeing concrete actions taking place. Within the irrigation department staff, there is an acceptance that the way ahead is through involving the farmers. The efforts of DSC to mobilise farmers in the Dharoi scheme would have made little difference had not the government put in its own stake as well.

An order from the top makes things move: Unless people in the government are convinced, making headway is difficult. DSC was able to influence the government to release 32 different orders. A few examples of prominent government orders include the PIM order of June 1995, the Model Bye Law for Cooperatives July 1995 and the Registration of Irrigation Cooperatives order dated July 29, 1995. The orders were a result of the sustained done by DSC at the ground level with NKD officials.

Transparent processes are key to institutional success: Cooperatives dealt with huge amounts of fees collection and are responsible undertaking canal maintenance and rehabilitation through the funds provided by the NKD. The decision to keep accounts open for scrutiny coupled with open decision-making procedures promoted democratic and transparent operations.

Conclusion

The pilot project which started in one village, Dharoi, a decade and a half ago has emerged as a model PIM cooperative in Gujarat. With 192 irrigation cooperatives covering the entire command area of the Dharoi scheme, the revolution has taken off. Farmers have been successful in their efforts to reduce water usage. The shift from the earlier model of paying for water for the entire season to a system of paying for water on hourly basis has proved that farmers are willing to accept changes if they are convinced. They are also ready to pay a higher price as they know that with water reaching their fields, their fortunes will also skyrocket. The farmers today are reaping good benefits as a result of all the three revolutions-the green, white and blue. The revolution TRIAD is ensuring the sustain ability of their livelihoods.

Notes:

1. Buch, V.B. (2003), Report of the Task Force on Accelerating PIM in Gujarat through Legislative Approach, Part 1
2. Shah, Anil, C. (2000), "The Deprived in the Command Area of Irrigation Systems", DSC publication
3. The volumetric approach involves installation of volumetric devices to measure the quantity of water at a canal outlet and charging for water based on the quantity supplied to the farmer.

Chapter 2

Rejuvenating Natural resources, Rejuvenating People A Case of Participatory Watershed Programme

Swomya Prakash

Introduction

Watershed development in India was conceived as a strategy for protecting the livelihoods of the people inhabiting fragile ecosystems that had been experiencing denudation. Conditions of soil erosion and moisture stress had a direct bearing on land productivity. Soil and moisture conservation measures in watershed development projects aimed at improving agricultural productivity in such fragile ecosystems. In addition to this, watershed development focused on ensuring availability of drinking water, fuel wood and fodder. Since the mid-eighties, the watershed approach has been viewed not only as an approach for sustained productivity and rational utilisation of natural resources but also as a strategy to eliminate poverty by increasing incomes of inhabitants in dryland areas and by providing long-term employment for farmers and landless peasantry. Some also view it as a strategy to develop the prospect of food security in the dryland regions of the country.

From its inception, DSC has worked towards mainstreaming the concept of watershed development among the development fraternity. DSC believes in learning from field experiences and testing innovative approaches before translating them into practice. This case describes the processes followed by DSC to promote watershed development in Gujarat. The learning from this practice is being used by DSC to develop modules for practitioners involved in similar work elsewhere.

Context

Meghraj Block in Sabarkantha District is one of the 43 tribal blocks in Gujarat and is also one of the least-developed blocks. The block has a geographical area of 544.81 sq. km and a tribal population of 51,612, which is almost 36.4 percent of the total population¹. Meghraj is prone to droughts with a drought-like situation occurring once every four years. Although the average annual rainfall in Sabarkantha District ranges between 500-1,000 mm², this block remains semi-arid due to few rainy days and high surface run-off. The soil type ranges from black, silty, rocky to loamy. Since this area is closer to Rajasthan and a part of the Aravali range, the land is sloping and rocky and the water retention capacity of the soil is low. The average size of land holding ranges between one and two hectares.

Agriculture is the primary occupation in the block although due to scanty rainfall, farmers can only grow crops like maize, *bajra* and pigeon pea during the monsoon season. The land remains largely without any crop cultivation during the summer months and farmers with access to some sources of irrigation usually grow wheat during the winter (See Table 1). Large farmers use bore wells for irrigation. However, extensive use of bore wells over the last few decades has led to a decline in the ground water table and a subsequent reduction

in the water levels. Since water is not available for irrigation and semi-arid conditions prevail, the scope for other sources of income is quite restricted. Though the district has the largest dairy in the cooperative sector, arid conditions have restricted fodder cultivation to a large extent. Low availability of fodder for animals gradually led many people to abandon animal husbandry as a livelihood option because maintenance of animals becomes a costly affair if fodder has to be purchased from outside. The decrease in soil moisture has also affected the forest cover and reduced the supply of forest products which were earlier used for domestic consumption and also augmented the income of the poor. In the absence of any major employment opportunities in the area, there is large-scale post-monsoon seasonal migration of adult males in search of labour. The village panchayat did little to address the livelihoods issues that the community faced. No other village level institution existed and the livelihood situation for most of the inhabitants was precarious.

Table 1: Season-wise crops grown in Meghraj

S. No	Agricultural Season	Crops
1	Kharif	Maize, Tuvar, Bajra
2	Rabi	Wheat

Source: CfID (2006)

Intervention

In 1997, a workshop on issues related to watershed development was held at the State Institute of Rural Development (SIRD), where DSC shared its experience of developing village institutions and conducting participatory planning exercises for watershed development in Amreli. Following the workshop, the District Rural Development Agency (DRDA) invited DSC to work in Meghraj taluka. Under the Integrated Watershed Development Programme (IWDP), over 12,000 hectares of land was given to three agencies, of which DSC was approached to conduct watershed activities in over 2,000 hectares. The remaining 10,000 hectares were entrusted to two other agencies, the Forest Department and Manav Kalyan Trust.

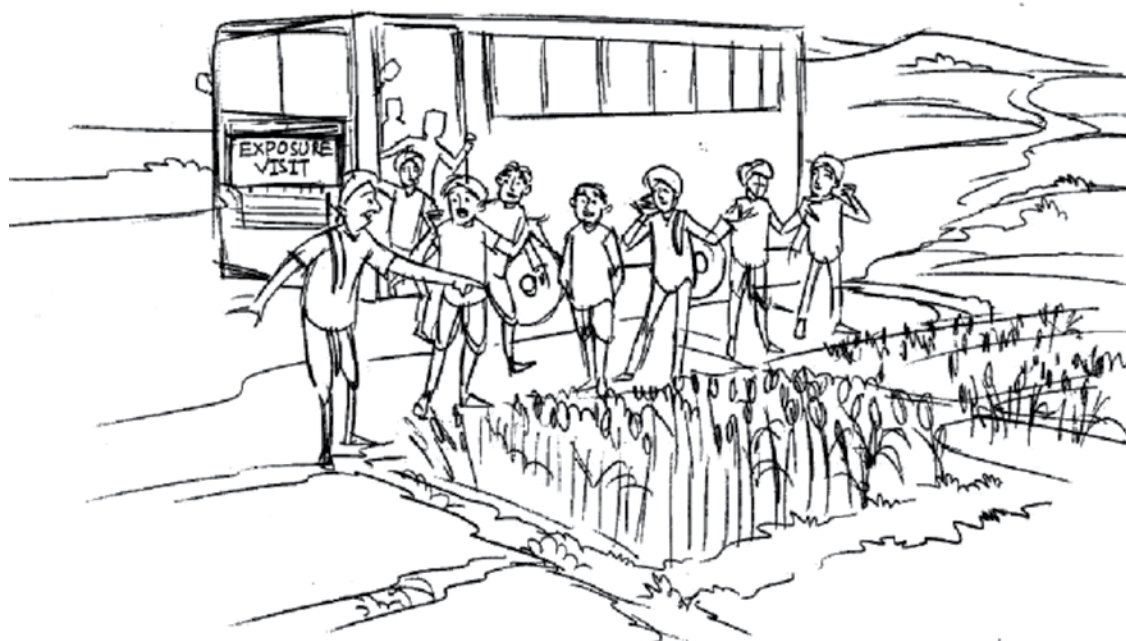
DSC started its work in Meghraj in 1999. The intervention was designed for seven villages - Valuna, Bhatkota, Vaniyawada, Modersumba, Gockchuan, Tarakwadia and Dholvani - of Meghraj Block. The topography was new for DSC, which had already done similar work in Amreli District of Meghraj where the land was more fertile. DSC began by organising a Participatory Rural Appraisal (PRA) in all the seven villages. It gathered information on critical indicators including literacy rates, agriculture productivity and rainfall, and identified the livelihood options of the inhabitants. DSC also gathered secondary information from various other sources, which provided a more thorough understanding of the issues in Meghraj.

To interact with community members, DSC organised *Gram Sabhas*³ in all the villages to identify the causal factors and the interlinkages between the problems. From the very beginning, DSC realised that incorporating the opinion and needs of the people

was crucial to yielding results and making interventions sustainable in the long run. In these meetings, people revealed the problem of water scarcity in their villages, which affected agriculture productivity and reduced the scope for animal husbandry. Both these activities were the major income-generating sources and livelihood options for people in the villages.

Initially, villagers were not very convinced about an outside agency interested in resolving the situation without any pecuniary interest. A common fear that loomed in the minds of the people was that DSC might confiscate their lands or force them to convert to some other religion. This fear came from previous interventions in this tribal area by previous NGOs and government agencies, which promised huge benefits to the rural communities but failed to deliver. DSC realised that unless it was able to dispel such fears from the villagers, initiating watershed development would be a difficult task.

DSC began to engage with the community with the purpose of building their trust and confidence. It hosted video shows, hamlet and village-level meetings and exposure visits on a regular basis to discuss and address among other issues, the issue of their fear about DSC as well. DSC shared its objectives as an organisation - why it had been founded and why it had taken on this work. Exposure visits were organised to locations where other agencies have done similar work. For instance, a visit to the SARTHI's field unit in Panchmahal - one of the tribal districts of Gujarat - was organised. The exposure visit included representation of at least one person from each hamlet. In addition to building the confidence in DSC, the exposure visit served the purpose of allowing villagers see for themselves the intervention around watershed.



Some of the villagers could easily relate these interventions to the possible future benefits in their villages. The villagers of Meghraj also interacted with the host villagers who almost spoke the same dialect and were hence easily convinced about the processes. Another exposure visit was organised to the working area of AKRSP(I) at Netrang. The villagers from Meghraj became aware of the institutional arrangement for watershed development when they interacted with the members of the Watershed Committee and began to understand the importance of the committee, the role of the president, the duties of the secretary and the code of ethics practiced by the committee. These exposure visits yielded much better results than discussions in the villages.

DSC screened a few technical movies on watershed such as “Jal Jeevan Nu Dhapkar” and “Lalak”, which helped in developing the perspective around watershed. Villagers who attended the exposure visits and the training sessions thereafter interacted with others in their own hamlets and slowly convinced others about the process and also about the agency that was to carry out the work. The trust building process took time, but it was essential.

DSC laid emphasis on involving the community in developing watershed plans. With assistance from DSC’s technical team, people made a map of the watershed following the ridge to valley approach⁴ and selected suitable sites for water harvesting structures and drainage line treatment. They also identified activities and planned the execution of various soil treatment measures. Priority was given to those activities that were in the common interest and benefited a large number of households. Also important was finalising a few entry-point activities like community halls, *gramvatika*⁵ and construction of roads.

Many of these plans could be arrived at through extensive use of the resource maps that were developed during the PRA exercises and also validated at a later stage through transect walks. A range of different soil conservation measures and forest development activities such as field bunding, gully plugs, nalla plugs, gabion plantations, horticulture etc. were identified during the course of this planning. Processes were initiated towards setting up of an institutional arrangement - the Watershed Committee was formed and given the responsibility of developing a plan for land and water related treatment. The committee was also responsible for ensuring effective and efficient implementation of the plan and for maintaining the books of accounts. Each hamlet⁶ had a representative to the committee. The Watershed Committee was headed by a President and had a Secretary. Members of the committee were selected from within the hamlet of initiative and leadership qualities. The Watershed Committee took decisions to conduct meetings once every month, declare that the work was completed, and planned activities for the next month. This declaration was put up at public places for others to see. A *Gram Sabha* was also conducted once every three months, which reviewed the progress of the work done by the Watershed Committee.

After the formation of the committee and finalisation of its work plan, DSC facilitated the registration of the committee with the DRDA and opened a bank account in its name in a bank branches. It was now time to help build the capacity of the members selected as

representatives of the community. The DSC team developed training modules a range of topics including transparent operations, understanding the watershed approach, role of people's participation, facilitating the involvement of women, accounting and book keeping, and technical skills like masonry and measurement.

After participation in the trainings and exposure visits, each committee member became responsible for implementation of the execution of physical work in their hamlet. Beneficiaries, whose land was associated with the watershed activities, were organised into User Groups (UGs) with a responsibility for the monitoring of physical work. Both men and women participated equally in carrying out the work.

Soil and moisture conservation: During the entire course of the project, the total physical work completed across the four watersheds covered an area of 1,863 hectares and involved a cost of Rs. 5.38 million. The major activities that were carried out included check dams, field bunding, gully plugs, nalla plugs, percolation tanks, gabion plantations, cattle treatment camps and construction of gramvatikas (See Table 2 for details). Women participated in the execution of various kinds of physical work and were trained as masons as well. DSC initiated the concept of Extension Volunteers (EVs) from AKRSP(I) to this location. These volunteers were essentially local people who were given technical training. Farmers contributed 10 percent towards interventions planned and executed on common property and between 15 and 25 percent when the work was executed on their own land. Due to the different activities that were carried out in the watersheds, the contribution generated was equal to 700 person - days of labour work.

Table 2: Status of physical activities undertaken and their financial costs in four watershed projects implemented by DSC

Sl.NO	Activities	Physical Status	Financial Status
1	Contour bunding (rmt.)	62,191	12,19,174
2	No. of Gully Plugs	4	1,072
3	No. of Nalla Plugs	55	8,45,837
4	No. of Check dams	16	21,40,561
5	No. of Farm Outlets	267	2,75,652
6	No. of Percolation tanks	1	38,381
7	No. of Gabion Structures	2	35,652
8	No. of Sandbags (Bori) bund	2	2,600
9	No. of Plantations	87,815	1,57,981
10	Horticulture	8,100	2,49,186
11	No. of Kitchen Gardens	755	20,815
12	Cattle camps (No. of cattle treated)	1,582	55,645
13	No. of <i>Jathropha</i> plants	45,000	1,03,972

Source: DSC

Post programme processes: In many of the watershed villages, the completion of the physical work was seen as an end to the systems and institutions that had been put in place. The Watershed Committee would thereafter become non-functional in the absence of funds. Therefore, DSC discussed this issue with the farmers and from these discussions emerged the idea of a Farmers' Federation. With support from DSC, a federation named "Dhangovan" was formed. The federated body had 22 members from the four Watershed Committees and two other members from the SHGs. These members were trained on various aspects like agriculture and account keeping and shown videos related to the enhancement of agriculture production. Some of the major activities that the federation undertook centred around agriculture. The work included demonstration of a package of agricultural practices, undertaking seeds production programmes, creating awareness on moisture conservation techniques, collectivizing the sourcing of agricultural inputs and marketing of agricultural produce - activities that had the potential to augment the livelihood of the rural households. The federated body steered these processes in the villages, taking them beyond soil and water conservation work.

DSC also facilitated women's institutions around savings and credit activity. While these actions were initiated during the initiation of the watershed work, they took a more concrete shape after the watershed work was completed. With investment being made on soil and water conservation and water resources getting augmented, households would need to make additional investments to benefit from the improved situation. Discussions with womenfolk in tribal villages gave insights into the role played by tribal women in the household and their financial difficulties owing to their dependence on usurious local moneylenders for credit for agriculture, education and housing purposes. Since most of these women hailed from poor households, they were unable to save much from the amount earned through labour. Also, women feared putting aside the scarce resources in an institution since they had never experienced these processes. DSC's suggestion to form a Self-Help Group (SHG) inspired the women to come together. Initially, women resisted but after interacting with members from Mahiti and Utthan - organisations that had successfully formed SHGs of their members - during an exposure visit, they understood the benefits of savings and credit in a small group. In the beginning, a few groups were formed in each village with a monthly saving of Rs. 25 by each member. Subsequently, a bank account of each SHG was opened. Opening the bank account proved to be a challenge for DSC and entailed several visits of bank officials to SHG meetings to ensure that the groups were genuine before they agreed to open the accounts. After a year of motivation, about 5 - 6 SHGs were formed in each of the seven villages. By then, banks agreed to provide loans at four times the amount saved by the group, which helped the rural women reduce their dependence on local moneylenders and borrow for dairy activities and children's education.

Around the same time (2002), the Swa-Shakti⁷ project was also launched. Under this project, nineteen SHGs were provided support for a period of two years. The SHGs received Rs. 5,000 towards formation and another Rs. 10,000 as a revolving fund under this project. Since the members of the SHG were new to the concept, DSC trained them on

aspects such as conducting meetings, preparing agendas and recording meeting minutes, maintaining books of accounts, assessing credit requirements, drawing up repayment schedules and calculation of interest on loans advanced. They were also trained on banking-related procedures such as withdrawal of money from the bank account, depositing the savings amount etc.

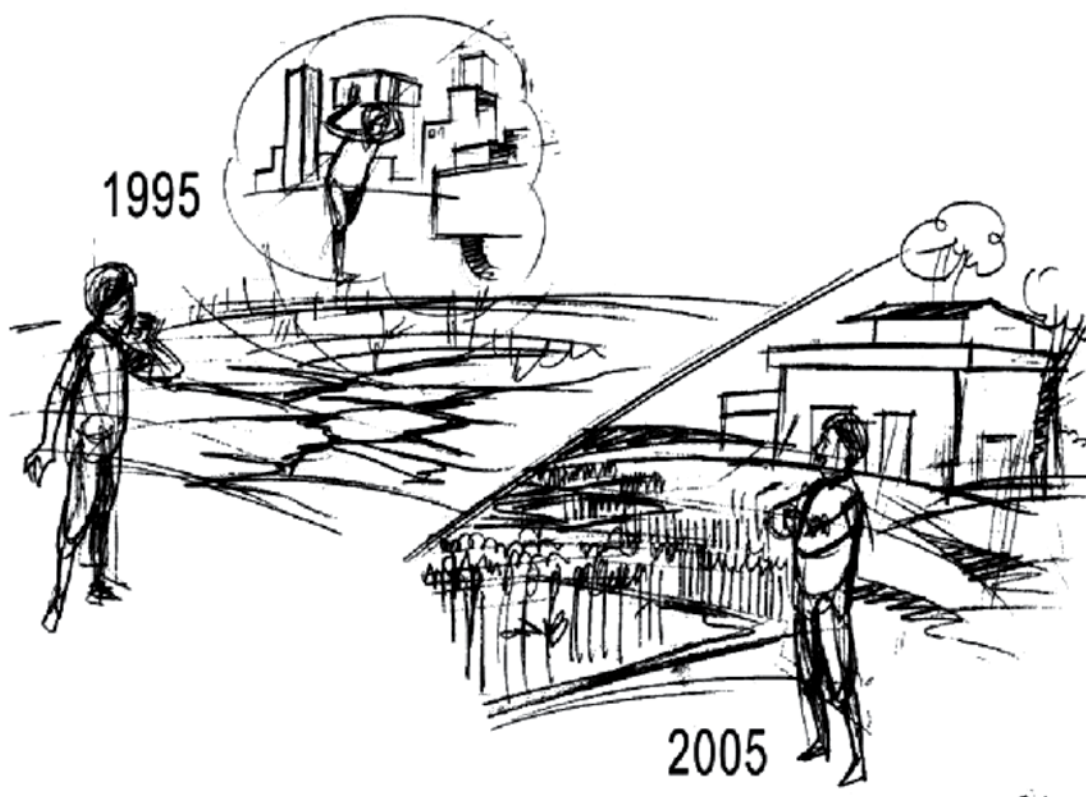
However, this intervention in the watershed villages faced a big setback as soon as the Swa-Shakti project was over. The follow-up in terms of recovery of the disbursed loan to its members was weak and this resulted in members faltering on repayments. DSC decided to obtain support of agencies that had been in the forefront of the SHG movement. Thus, DSC facilitated visits of the SHGs to the Mahiti and Utthan Cooperatives to draw inspiration from the challenges faced by other SHGs.

After prolonged discussions, members were inspired by the idea of having a federated body. Soon after, a federated body named “Sangam Savings and Credit Federation” with 321 members belonging to 49 different SHGs was established. Initial savings of the members of the federation varied between Rs. 25 and Rs. 500 per month. Each month, a meeting is held in which the groups’ savings is deposited in the federation’s bank account. For one year, the federation concentrated on savings and did not disburse loans. Each member of the SHG purchases ten shares of Rs. 10 each and pays a mandatory application fee of Rs. 1 and another Rs. 4 for the pass book.

Members also made a payment of Rs. 25 as the first payment. This amounted to a total of Rs. 130 per member at the time of joining. After three years, the federation has more than 600 members with more than Rs. 0.25 million worth in shares. Besides savings, the federation has also started engaging women in income generation activities like production of vermicompost, bio-pesticide preparation and nursery raising activities. These are part of the larger processes to economically empower women and augment their livelihood on a sustainable basis.

Outcome

The intervention around watershed was by no means a simple and straightforward one. It went beyond soil and water conservation measures and invested in building human and social capital by developing a cadre of people within the village which could help in executing watershed activities and ensure maintenance of structures after the completion of the watershed project. The formation of two federated bodies - one with women around savings and credit and another with both men and women of the existing watershed committee - were steps that were taken to yield results in the long run. Some of the outcomes that can be directly attributed to the intervention are:



The productivity of the land has improved: A number of positive changes were observed due to watershed treatment and participation of the community in watershed activities. The moisture content and the water retention capacity of the soil have improved. There has been recharge of wells and tube-wells, which has helped farmers to cultivate one additional crop. Agricultural productivity has increased because farmers have adopted scientific agricultural techniques and practices and are using quality seeds supplied by their federation. Watershed activities have also increased the availability of water, which has led farmers grow cash crops like cotton and castor besides cultivating food crops. Farmers who have obtained a better income as a result of these initiatives have started investing in dairy-related activities. One can see farmers now growing fodder crops to meet their requirement of green fodder.

Buy-in' by the community has resulted in sustainable practices: DSC identified local people and trained them as resource persons to further the process of engaging the community. The involvement of the local cadre and the creation of community institutions like the Watershed Committee, User Groups and SHGs convinced other village members to become a part of this process. Capacity-building activities and exposure visits further ensured the buy-in of the community and even prompted fence sitters to become a part of the process. Women are engaged in manufacturing vermicompost and other inputs for agriculture. Establishment of the SHG federation and the federation of watershed groups contributed to sustainability in the long run.

Sustainable institutions have led to sustainable livelihoods: SHGs have formed a federation where women members have saved and used their savings when required. This has been a great relief to households who are now free from the clutches of money-lenders. Money saved by way of interest is money earned. These savings come in handy and are used for buying agricultural inputs. Money spent on buying good quality input helps in improving production, which has led to an increase in income. The manufacturing of vermicompost and bio-pesticide has also augmented income further.

Learning

Many agencies have been involved in watershed work all across the country. DSC's interventions in Meghraj provide learning for practitioners elsewhere. Some of the learning emerging from the programme include:

Exposure visits play a key role in sensitising communities: Initially, people were uninterested in interacting with DSC's representatives, mainly because they had been cheated by agencies which had made false promises in the past. In such a scenario, exposure visits served as an eye opener. Villagers were able to view interventions first hand and understand how these could benefit them.

Active people's participation and social mobilisation made the difference: Peoples' participation is crucial to successful implementation. By doing so, they realise the extent of their problems and come together to find solutions. Issues affecting men and women may be different. Men tend to consider agriculture more important since it is the prime source of income and food security whereas for women, drinking water and animal husbandry are more important needs to be met. Therefore, any intervention needs to involve both men and women for solutions to be effective. Motivating and involving people in planning, implementation and monitoring ensured that the work sustained itself and grew, under the leadership and initiative of the communities themselves, with guidance and support from DSC.

A collective approach is the key to problem solving: A collective approach provides a platform to discuss the problem and share thoughts and ideas for solutions. The most important outcome of forming a group or a federation is the opportunity for people to come together, to collectively analyse their situation, devise ways of overcoming problems, and then take action at the village level to bring about changes and improvements, resulting in increasing overall returns to the community.

People's institutions will always require hand holding in the initial stages: People's institutions should not be left unguided during the initial stages when they usually do not have adequate maturity. Dominance of group members may create conflicts. Also, when a new group takes a decision and does not get desired results, this may affect member enthusiasm. Initially, providing a few days training to SHG members on group formation and functioning was not sufficient and led to disintegration of the groups. This was because the federated structure required more support and hand holding in the beginning stages.

Exposure visits to successful SHGs gave members the confidence to get back on their feet.

Conclusion

The case illustrates that watershed, which is often seen as being limited to soil and moisture conservation measures is not just that. It requires working on all the five resources - physical, natural, social, human and financial simultaneously. In watershed activity, people's livelihoods get augmented on a sustainable basis only when the promoters take effective measures to make this happen. Peoples' participation in decision making, setting up of institutions and investing in building human capital have been the hallmarks of this intervention. The intervention included working with both men and women and creating spaces for them to contribute to improving their lives.

References

CFID (2006), Impact Assessment of Watershed Programme on Tribal and other Backward Communities in Sabarkantha District

Notes

1. Census 2001, Government of India 2001
2. District Census Handbook, Sabarkantha (2005)
3. *Gram Sabha*: A body constituting of all adults from the village.
4. The ridge to valley approach re-forms and reshapes land so that it absorbs more water, leading to healthy ecosystems and higher, more sustainable crop output. It is based on the principle that the poorest people hold lands on the ridges, where its quality is the worst because it fails to collect water. It is therefore important to uplift them first, and then move down toward the people in the valley who need help less urgently.
5. Government of Gujarat has initiated a *Gramvatika* programme for the development of gardens in villages.
6. A small conglomeration of residential houses of villagers.
7. Swa-Shakti is a project jointly assisted by the World Bank, International Fund for Agricultural Development and the Government of India. This project was implemented in seven Indian states by the Women Development Corporation.

Chapter 3

Thrust on Thirst Initiatives on Drinking Water

Manju Ravi

Introduction

The 1994 Watershed Guidelines directed that priority should be given to those villages where water levels are declining while selecting villages for implementing the watershed programme. The guidelines, therefore, gave special attention towards making resources available in villages facing a scarcity of drinking water. The National Water Policy adopted in 2002, too, has accorded the highest priority to drinking water. According to this policy, sufficient drinking water must be available within a distance of 100 metres of any residential area. However, it soon became evident that watershed planning had failed to meet its important priority of catering to the basic need of drinking water. The impact of this is now evident in the form of an acute drinking water shortage in watershed villages.

Context

In 2004, DSC commissioned a study¹ to examine drinking water security in 48 watershed villages covering nine watershed projects across Gujarat. The study (see details in Box 1) was undertaken in villages across both hilly and/or tribal locations of Dahod, Sabarkantha, Amreli and Rajkot where habitation is scattered and ground water levels have shown steady depletion in recent years. These villages had also been witnessing very irregular rainfall. The study revealed that the status of agriculture and water resources had improved in those villages as a result of the implementation of the watershed programme. There was also a significant increase in the ground water table. However, there was little impact on



the availability of drinking water in these villages, which was a matter of concern. One of the purported reasons was that when a watershed project was being implemented, the nature of work focused on agriculture development. More attention was given to treatment of agricultural lands, often geographically located away from residential areas. No attempt was made to improve water sources that could be used for drinking and other household consumption purposes, as a result of which women had to walk long distances to fetch drinking water. Discussions with women in these villages revealed that women were spending an average of four hours each day to fetch water. Investing this time into an income-generating activity would have earned these women Rs. 720 every month or Rs. 8,640 every year. The study established the need for interventions that are specific to increasing drinking water availability in watershed projects.

Based on these observations, DSC planned to work towards improving the drinking water situation in these villages. However, any intervention in the completed watershed areas needed approval from the government. The study findings were shared with the Gujarat Water Supply and Sewerage Board (GWSSB), Water and Sanitation Management Organisation (WASMO) and the Department of Rural Development. This set the stage for working together on this issue.

Box 1: Study findings on drinking water availability

- Out of the 48 watershed villages surveyed, only seven villages (15 percent) had access to drinking water throughout the year. The remaining 41 villages did not have adequate supply of drinking water.
- Approximately 64 percent of the women spent more than four hours a day fetching drinking water, usually traversing a distance of 2-3 kms. The situation was aggravated during the summer months. Women had to depend on water tankers supplied by the *panchayats*² and on bore wells usually owned by a few well-off people in the villages. Their drudgery increased as they had to walk even up to 5-6 kms. to collect water.
- Women revealed that were had not been involved in the decision-making aspects during the implementation of the watershed programme. While progress had been made in soil and water conservation, no initiative to solve their drudgery in collecting drinking water was implemented.
- Women who engaged in wage labour during the day had to collect water during the night. They would often fall sick due to continuous work hours. In tribal areas, most sources of water are located in hilly terrains. It was a hardship for women, particularly for pregnant women, to collect water.
- In one-fifth of the surveyed villages, a family of five spent more than Rs. 300 each month for drinking water. Sometimes they also purchased water on an hourly basis.
- 40 percent of the villages reported one or more diseases – kidney stones, skin disorders, yellow teeth and bone and joint problems – due to the poor quality of water.

Intervention

The intervention phase had two strategies. During the first phase, DSC planned to influence government policies to focus on drinking water security in watershed villages. During the second phase, DSC planned to engage in field-level demonstrations and practices based on the actions suggested through policy influencing.

Influencing Policy

In 2004, DSC shared the findings of its study with the GWSSB, WASMO and the Department of Rural Development. This led to a modification in the Hariyali Guidelines to incorporate a revised set of rules on watershed selection and implementation, which underscored the augmentation of drinking water in watershed villages.³

Directed by this new set of guidelines, DSC conducted a workshop in Gujarat on June 14th, 2005 to sensitise the Watershed Project Implementing Agencies and functionaries from the Department of Rural Development and the GWSSB. This sensitisation workshop was attended by secretary level officers from the government. The workshop suggested allowing for such provisioning and improving coordination with the GWSSB on this issue.

During this time, Project Implementation Agencies(PIAs) were already experiencing difficulties in incorporating the drinking water directives of the Hariyali Guidelines. Many agencies had little understanding of how they could help realise the stated objectives. Despite the fact that women remained the primary stakeholders in programmes for domestic water use, PIAs expressed apprehension about their lack of experience in integrating women into watershed planning. Some suggested that since the budgetary provisions were low for soil and water conservation, extra financial provisioning was required to provide drinking water structures in the watershed villages. The Development Commissioner and the Chairperson of the Water Supply Board thereafter decided to strengthen drinking water sources in watershed work as an important part of implementing the guidelines. The following decisions were taken:

1. Implementing drinking water schemes of Swajaldhara, an initiative of the central government and WASMO, a state government body on a priority basis in all the watershed villages
2. Facilitating the setting up institutions like WASMO at the district level to extend technical and financial support for implementing the Swajaldhara Scheme (at that time, WASMO was functioning in four districts only).

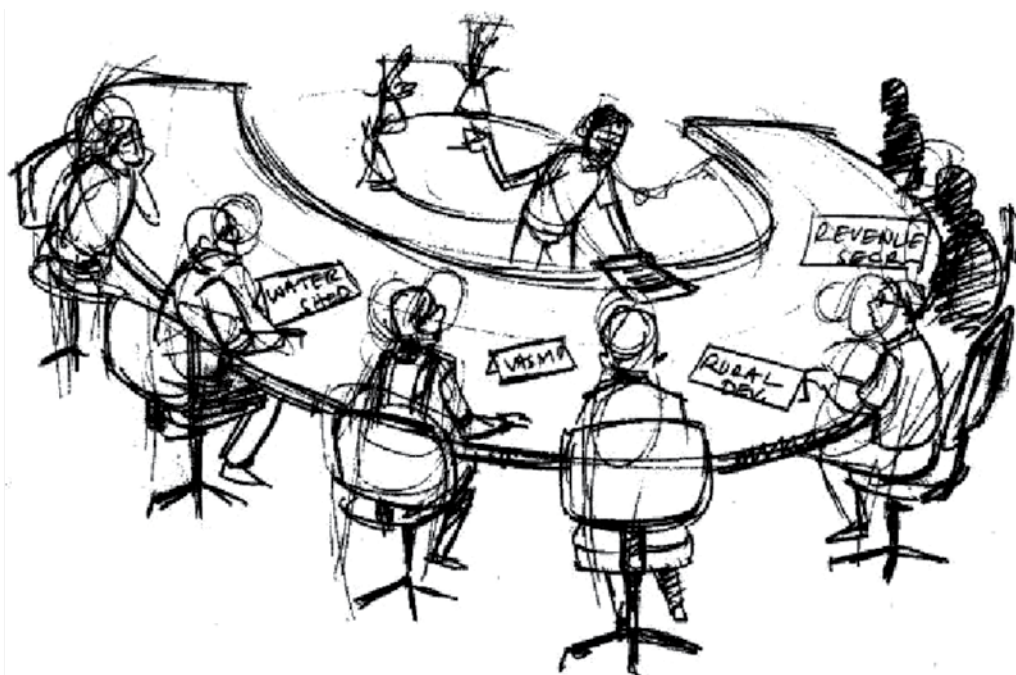
These decisions helped take the next important steps towards ensuring drinking water security:

1. Top priority would be given to coordination between the Rural Development Department and the Water Supply Board to integrate Swajaldhara activities into watershed development

2. As a follow-up, a four-day workshop was organised with the Project Director of DRDA and District Development Officers (DDO) covering all the 25 districts⁴ in Gujarat. This workshop was organised to enable officials at the district level to develop an understanding of the recommendations in the agreement letter with the government. It was imperative that each district official understood the need for drinking water security and ensured that drinking water was given priority in the watershed development work in their respective districts.

Subsequently, the Rural Development Department of Gujarat issued an order dated October 4th, 2005 which required the Project Director, DRDA and DDO to sensitise other functionaries at the district and block levels, and provide them the necessary guidance to concretise their plans for addressing drinking water issues in watershed villages. The GWSSB also stated that it would follow the directive of the Collector and Member Secretary in this regard.

It was important for DSC to design its watershed training programme (also known as Basic Training Course) so that its participants were capable of addressing the issue of drinking water by aligning the village drinking water plan with the watershed plan. This process was undertaken in coordination with and approval of the District Project Manager. DSC decided to handhold five programme implementation agencies for technical and financial support, and mobilise them to establish the processes for integrating and implementing the two plans. It was envisaged that the knowledge emerging from these five “field labs” would help solidify DSC’s practice perspective. The activities undertaken included a) demonstration work with the PIAs in their respective districts and b) awareness generation for implementation of the Hariyali Guidelines at the block and district levels.



Working with the Project Implementing Agencies: The five “field labs” included Prakruti Foundation, Zalod, Sarvodaya Seva Sangh, Vankaner and DSC at Meghraj and Dhari. The PIAs designed and implemented programmes for drinking water security in 29 villages of Rajkot, Dahod, Sabarkantha and Amreli Districts. The village level leaders of all 29 villages were taken for exposure visits to villages that had successfully implemented drinking water initiatives. Capacity building programmes were organised on a range of issues such as people’s contribution, assessment of water needs, women’s participation, transparent administration, coordination between PIAs and the government, and the design of sustainable drinking water structures. Funds of Rs. 35 million arrived from the Swajaldhara scheme and were utilised in all these 29 villages. Water distribution facilities such as water tanks, pipelines, bore wells, bathing places, wells and drinking water troughs for cattle were constructed. Villagers who were to gain from this intervention provided contribution in cash and kind for an amount of Rs. 3.5 million, which was 10 percent of the total cost of structures. This was a standard yardstick applied for collecting contribution from every household in the villages. A village level institution - Village Water Committee (*Pani Samiti*) - was developed and promoted for managing drinking water facilities at the village level. This committee was responsible for collecting the annual contribution, which ranged from Rs. 300-360 per household, as charges for the water supplied. In most cases, the integration worked according to the plan developed by WASMO in Gujarat.

DSC continued to organise district and block level workshops for the proper implementation of the government order in watershed villages and the development of the water resources. The objectives of these workshops were four-fold:

1. **Generating awareness:** The staff of the concerned government department was sensitised about the modification to the Hariyali scheme. There was also a lack of awareness about the Swajaldhara and watershed schemes being implemented by WASMO. These were also discussed during the workshops.
2. **Improving coordination:** The lack of coordination between the DRDA and WASMO officers exacerbated the situation. The workshops were the beginning of a series of efforts to bring them on a common platform.
3. **Increasing reach:** Before the workshops, watershed and Swajaldhara programmes were implemented together in only about 10 percent of the villages. The workshop provided an impetus to undertake watershed development in the remaining villages as well.
4. **Working together:** Both departments (WASMO and DRDA) drew up separate plans as a result of which they were unable to resolve issues. The workshop developed mechanisms to help the two departments work together.

Over the last few years, DSC organised 11 such workshops, out of which five were at the district level and six at the block level. These workshops were conducted jointly with DRDA and WASMO. Around 1,250 persons, including the village *sarpanch*, women members from the *panchayats*², Panchayat Secretary, District Development Officer, DRDA Director and the project managers participated in these workshops. The workshops played

a key role in driving the agenda of integration forward. As a follow-up to these workshops, DSC developed case studies of villages where both the schemes were implemented. These cases were prepared in the local language to enable other agencies learn from DSC's experience. DSC was conscious of the need to converge the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) with the watershed and WASMO schemes. It realised that this convergence would help augment water resources in impoverished villages.

Working on convergence

After the conclusion of the district and block level workshops, an intensive district level study⁵ was undertaken by Centre for Integrated Development (CfID), Ahmedabad. The purpose of this study was to document the changes that had been achieved as a result of convergence of MGNREGA, Watershed and Swajaldhara schemes in seven villages of block blocks in three districts. Funded by the AKF-sponsored Sustainable Community-based Approaches for Livelihood Enhancement (SCALE) project, the study revealed the following:

1. A water source was developed after which water distribution among households was successful in villages due to the coordination between DRDA and WASMO.
2. Coordination between the two departments helped target activities at the village level.
3. Members of the Watershed Committee and the *Pani Samiti* gained more clarity on each other's roles and areas of collaboration.

These findings were presented at a state level workshop held at the Ahmedabad Management Association on January 12th, 2010. The workshop brought advisors from WASMO, DRDA, NGOs as well as researchers and farmers together on one platform. The workshop emphasised the need for better coordination and resource allocation between the two departments. It also enabled other districts to initiate similar efforts in all other watershed programmes so that the agenda of drinking water continues to be addressed.

Challenges faced during implementation

While the initiative to accomplish convergence seemed simple, it was one of the most difficult tasks to achieve. WASMO and DRDA functioned differently at the state level and district level. Each had different sets of officers who are guided according to their own institutional norms. The process of efficient collaboration and coordination between both departments needed a third agency to facilitate the process. There were many grey areas including process initiation and grant management that needed to be addressed. Besides, there were difficulties in segregating activities that could or could not be allowed under each programme.

At the village level, too, both departments made different sets of demands to the *panchayats* and had separate institutional arrangement as well - one worked through the

Watershed Committee and the other through the *Pani Samiti*. Committee members would function differently as per the guidelines. The processes required a champion to address these differences and contradictions. DSC and the member PIAs played a key role to help develop a model that worked.

Outcome

The drinking water initiatives of DSC which involved different sets of strategies at different levels had the following outcomes:

New water resources were developed and vibrant community institutions were built to manage these water resources: Water resources have been developed through the initiation of watershed development activity in all the 29 villages where DSC became involved. Village institutions – Watershed Committee and the *Pani Samiti* – worked together to plan the execution of PIA and drinking water activities. All the 29 villages have formed rules for water usage and the maintenance of water resources. They also collect user fees from all the households in the villages.

Over 2,500 villages, where the Hariyali Watershed Scheme was implemented along with the *Swajaldhara* Scheme, have developed the capacity to manage the newly developed resources. This has been possible due to the extensive training and exposure received by the village institutions. They are now aware of that fact that planning for drinking water must be addressed at the time of watershed planning itself. This planning can be done with the available water sources in the village as well as through convergence of the watershed intervention with other government schemes.



Drudgery faced by the women in collecting water has been reduced: As water resources were developed, followed by efforts to create facilities to redistribute the harnessed water resources for home consumption, village women have been able to save time and reduce their work burden. They utilised this spare time in activities that brought in additional income. For instance, according to women in Bharana village, the saving of time could be equated with an additional income of Rs. 24 -25 a day.

Box 3 - Transformed Village

Under the Hariyali scheme, developmental work worth Rs. 2.5 million was undertaken to establish water resources in Otara village in Tankara Block of Rajkot. As a result, a distribution facility was established under the Swajaldhara programme through a bore well which was constructed from the funds of GWSSB and a pipeline from the Narmada Scheme. With this infrastructure, the village now has around-the-clock water supply. This has reduced the drudgery of women of fetching water from distant places. Local water sources of the village have also been developed and can be of use at the time of scarcity. The convergence of different schemes of the government has transformed the water situation in the village.

Convergence among policies and programmes is necessary to bring about change: Based on the findings of the study on water security and the successive process of engaging with the government at various levels, DSC's recommendations have helped in enhancing coordination between the watershed programme, MGNREGA and the drinking water intervention. Government officers from the Watershed Department and the Water Supply Board have begun to work together on a common platform. The percolation of the notion that one needs to work not just at the state level but also at the district, block and village level has been possible. The processes initiated under the Hariyali scheme have been accepted in the Integrated Watershed Management Programme (IWMP). Around 10 percent of the total budget of any Detailed Project Report (DPR) is available for augmenting the resources that will have direct bearing on drinking water in all the watersheds. Directives as recent as 2011-2012 mention the need for improving the coordination between WASMO, MGNREGA, Water Supply Board and the IWMP. DSC has helped develop an understanding of the processes of integrated planning in its trainings for PIA officials of the IWMP projects.

Concerted efforts on making drinking water available in watershed villages needed continuous dialogue with, and involvement of various other stakeholders, especially the concerned departments of the Government of Gujarat. Since government orders were issued from time to time, their implementation within the state was expected. However DSC's initiatives based on its successful experiences in Gujarat has been extended to other parts of the country as well. A study on drinking water security was undertaken in other states such as Andhra Pradesh, Maharashtra and Madhya Pradesh in the year 2010 which is expected to make an impact on the drinking water situation in those states.

Learning

The issues of drinking water security paved the way for a range of stakeholders to work together and bring about the desired change. Learning emerging from this intervention includes :

Understand the issue completely before jumping in with suggestions: It is important that practicing agencies invest time and effort in understanding the problem to be tackled. This often helps establish the causal relationships between various issues and processes. Once the issue is understood, concrete actions can be drawn out. For example, the drinking water study revealed that out of 48 villages, 41 villages had not given importance to drinking water because of which the womenfolk had to suffer. The fact that this negative situation was highlighted implied that a change in policy was needed.

Pilot a model before going to scale: Understanding the problem, addressing it through policy change and following a similar approach for other watersheds generated much learning on how processes can be fine-tuned. Only after this was completed, did DSC push the agenda for large-scale replication.

Focused on the issue: DSC remained extremely focused on the issue throughout. Through continuous follow-up and coordination with organisations and government, change was brought about. It is not just a change in policy that will work – the agenda must be pushed further to realise the implementation of policy.

Conclusion

The issue of drinking water in rural areas remained unaddressed even when millions of rupees are being invested by the government to augment water resources. The actions initiated by DSC - demonstration, research and engagement in policy dialogue to bring out policy policies and thereafter working with government departments and providing them support through trainings and other mechanisms - were instrumental in achieving the goal of drinking water security in watershed villages. Designing processes to help integrate various perspectives so that thrust could be built from all possible fronts is the hallmark of this intervention.

Notes

1. This study was carried out by DSC with Mr. Rushabh Himani of CfID.
2. *Panchayats* are rural governance institutions mandated under a 1993 constitutional amendment to implement welfare and development programmes in villages.
3. Government of India order dated 29th December 2004.
4. Gujarat had 25 districts then; it now has 26 districts.
5. Study on 'Convergence of Watershed Development Programme and MGNREGA to ensure Drinking Water Security Where do we stand?' CfID, Ahmedabad, 2010.

Chapter 4

Contemporising Watershed Education

A Case on Basic Training for Watershed Development and Management

Gordhan Katariya

Introduction

During the last two decades, capacity building has been a major area of investment in organisations. A range of definitions explain the term “capacity building”. Perhaps the most fundamental definition is “actions that improve effectiveness”.¹ Other discussions refer to the concept as actions that enhance an organisation’s ability to work towards its mission. The concept of capacity building among NGOs is similar to the concept of organisational development, organisational effectiveness and/or performance management in for-profits.

Capacity building is now recognised as the core of many development strategies. Community groups, NGOs and other civil society organisations are at the forefront of efforts to tackle poverty, ill health, environmental degradation, and social injustice and mitigate the effects of conflict and humanitarian disasters. This places huge pressure on these organisations to enhance their operational effectiveness and organisational viability. As a result, governments and donors alike recognise the need to invest in building the capacity of such organisations.

This case presents DSC’s intervention to develop a programme for building the capacity of professionals involved in participatory watershed development programmes that focus on developing the five natural resources or 5 “Js”: “*Jal*” (water), “*Jungle*” (forests/vegetation), “*Jamin*” (land), “*Janvar*” (cattle) and “*Jan*” (human beings) in an integrated and holistic manner. It discusses the processes adopted by DSC to design and deliver a Basic Training Course (BTC) that imparted an understanding of institutional development as well as physical interventions in PIM for almost a decade and a half. The BTC course examined programmatic issues and also focused on attitudinal and behavioural change to motivate individuals to be change agents in PIM.

Limited success of three large-scale governmental programmes i.e. land reforms, Integrated Rural Development Programme (IRDP) and wage-employment programmes during the 1970’s and 1980’s led to a realisation of the importance of inter-linkages between improving productivity of natural resources and sustained increase in rural income. Further, there was an increasing concern for environment development, which led to the shift in watershed programmes from a resource-based approach to that of a livelihood approach.

In 1993, the Hanumantha Rao Committee was constituted to evaluate area development programmes such as the Drought Prone Area Programme (DPAP), Desert Development

Programme (DDP), Integrated Wasteland Development Programme (IWDP) and Hill Area Development (HAD) programmes implemented during the 1970-80s. The committee found that a major reason for the low impact of these programmes was that they were largely “top-down” and lacked community participation and involvement. The committee recommended the need for a “Community Based Watershed Management” (CBWM) approach. This recommendation led to the emergence of the common guidelines, “The National Policy Guidelines on Watershed Development”, which made way for a radical shift in the watershed approach and placed community participation as central to all planning and management.

For the first time, people were at the centre of watershed management and their involvement was mandatory in the planning and implementation of this programme. This was a major shift from the earlier approach of the programme and required a very different way of thinking, behaving and acting. It meant that those responsible for implementing the watershed policy at the state and district levels and the implementing agencies at the project level must recognise the indigenous knowledge of rural communities, create an enabling environment for them to participate effectively, build their capacities to develop sustainable institutions and thereafter bring about physical interventions. It meant a change in government and PIA roles that of a “doer” to a “facilitator”. It meant a shift in recognising rural communities as partners in the development process rather than merely its beneficiaries. Those involved in planning, implementation and management of the programme needed to develop trust in the rural community’s ability to manage their own natural resources effectively.

This policy authorised the village-level watershed committee as responsible for implementation of the programme. The committee was provided 75 percent of the funds for implementation of watershed activities. Therefore, intensive capacity building not just of the people, but also of those who were facilitating the peoples’ institutions i.e. the PIA and the WDT was required. The guidelines provided an investment of 5 percent for community mobilisation and village-level institution development and another 5 percent for capacity building of those at the forefront of implementation.

Capacity building was envisaged for both the facilitating/partner implementing agency and its professionals from various disciplines [which made up the Watershed Development Team (WDT)] and members and functionaries of the village level organisations i.e. the Self-Help Groups, User Groups, Watershed Committee and Watershed Association. Since the concept was new and involved training a large number of people, the government realised that the involvement of voluntary organisations and government training institutes would help support this cause. The guidelines developed by a committee consisting of Shri B.N. Yugandhar (the then Secretary, Rural Development) and Shri Anilbhai Shah (Founder Chairman of DSC) recommended a four-week training programme as an essential component of the programme.

The Rural Development Commissionerate, Gujarat selected the State Institute of Rural Development, Agriculture Universities and two NGOs, N.M Sadguru Foundation and

DSC, as training institutes for the state. MANAGE, Hyderabad conducted a TOT for the training institutes. A Training Committee was formed by the state government to develop a comprehensive training plan and review mechanism for the state including the curriculum for the BTC.

The BTC also took into account the needs of the diverse members of the WDT. This team included a community organiser, an agriculture expert and an engineer. In order to achieve the goal of community participation, it was necessary that all the three members of the WDT share a common understanding of the programme. DSC was among the first few organisations selected to conduct the BTC. The training programme focused on participatory methods to help the WDT seek community participation in designing the intervention and subsequently managing its delivery. At that juncture, without many other examples to emulate, the training design began to develop and promote village institutions and oriented communities about the scientific methods of undertaking watershed activities. These processes, however, underwent changes with time. As the course evolved, appropriate modifications were incorporated. The BTC has been a long and enriching journey for DSC as its participants and successfully trained many individuals to undertake planning, designing, implementing and managing of the watershed projects.

Intervention

The most challenging aspect of conducting the first BTC was that practically no models existed to draw lessons from. The course also needed to adopt a healthy balance between institutional, technical and theoretical sessions and practical learning sessions such as exposure visits to the field. The dimension of gender and equity could not be ignored in the design of the curriculum. Hence, at the initial stages, several forays were simultaneously commenced, which established the base for designing a systematic training programme.

Emergence of the design: A one-month course to engage participants from a range of disciplines was not easy to design. While a broad four-week module was designed during the TOT conducted by MANAGE, DSC spent time to design a course that incorporated the training needs of the PIAs. Since DSC played a key role as an implementing agency of the watershed programme and a support agency to many PIAs, it had first-hand knowledge of difficulties faced by the WDT and village functionaries in planning, implementation and management. At the same time, DSC's involvement in the District Advisory Committee helped familiarise it with the expectations of policy makers.

In the first attempt, DSC decided to build the perspective for the training since it meant a shift from a typical teacher-student lecture session to one of facilitated learning, participation and experience sharing. This involved a two-way process where both trainers and trainees learnt from each others' experiences. A post training action plan was incorporated into the training design to enable participants undertake different responsibilities and provide the required support from different individuals/organisations such as their own leader, DRDA, other government departments and DSC.

During 1994-95, DSC carried out four training programmes on Participatory Rural Appraisal (PRA) to help the implementation agency accelerate programme implementation work. At that point, any plans submitted required PRA charts and analysis. Trained participants were taken to visit AKRSP(I), BAIF and Ralegaon Siddhi, which enhanced their knowledge about practical application of classroom inputs and the need for PRA for a successful watershed intervention. Almost around the same time, the Rural Development Ministry and CAPART started implementation of watersheds. By then, CAPART was aware of DSC's BTC and selected DSC as the training support organisation for various implementation agencies in Gujarat and Maharashtra. During 1996-97, the DSC team performed numerous need assessments before conducting the training and developed methodologies to work with the participants who received inputs. The module that was offered focused primarily on three issues - Attitude, Skill and Knowledge. DSC realised that the participants attending the training should receive knowledge-based inputs, and the training should focus on developing the practice skills and an emphasis on inducing the needed change in the behaviour and attitudes. It had realised that the perspectives often do not take to grounding as the attitudes come in the way. It was necessary that the BTC design give emphasis on the right kind of behaviour to promote the perspective of participation. In recognition of this, DSC conducted 20 short training programmes, each of about 2-3 days duration. The visit of Professor Robert Chambers from the Institute of Development Studies (IDS), Sussex, in 1997 and his involvement in conducting a National level workshop on Attitude, Behaviour and Change brought about a positive change in the trainers and implementers. The workshop, which was conducted at the Gandhi Labour Institute, Ahmedabad made participants analyse and evaluate who really benefited from rural development programmes - those who had the most need but the least control over decision making (small and marginal farmers, landless) or those who had the least need but the most control over decisions (government, NGOs and the rural elite).



Though there was a government directive to officials involved with watershed work, in Gujarat, there remained an uncertainty over training programmes. Very few participants attended the training due to the travel distance. The state government thereafter divided the training responsibility between three agencies, DSC, State Institute for Rural Development (SIRD) and Sadguru Foundation. Each of them was given responsibility for conducting training in eight districts.

Launching of the course: By this time, DSC had designed a watershed curriculum. It convinced the government that a 2-3 day program made little sense as in most cases the first and the third day is half attended. Also, the time taken to travel came in the way when participants were asked to attend a series of modules at frequent intervals. The Government of Gujarat thereafter issued an order for conducting four week-long trainings instead of the smaller training programmes. The order also mandated that a member of the training organisation must be a member of the advisory committee at district level. Thus began the journey of Basic Training Course for watershed in Gujarat. To gain acceptance from the participants, DSC shared the broad objectives and topics in a one day workshop organised for WDT members from the eight districts. Thereafter, DSC performed a detailed need assessment to tailor-make the module based on the skill sets of the participants. In short, the processes were adapted to make the programme relevant to the participants. It was also necessary that the training programme add value to what the participants already knew. The first BTC was carried out in Kutch during 1998.

The BTC was divided into two modules. The first module covered sessions on topics like watershed approaches, livelihood approaches, watershed guidelines, participatory processes, attitude and behaviour, women's participation and institution development. It gave emphasis on how to conduct PRAs, making use of the data obtained and inferring the requirements of the community. Anilbhai's articles on "What makes a good PRA" and "Shoulder tapping"² were provided to the participants as practical tips on what to do and what not to do while doing such exercises². The second module included topics such as interventions related to water harvesting, soil and moisture conservation measures and vegetative measures, management of SHGs, increase in agriculture productivity, quality control of material and structures, book keeping of watershed etc. It also gave inputs on criteria and essential indicators on which the success of the watershed programme and its results could be measured. DSC took the support of the infrastructure in SIRD to conduct classroom sessions during the first module and the field locations of the respective agencies for field work. From then on, the next few years saw at least three BTCs being conducted every year. In addition to the BTC, the WDT was trained on specialised courses in institution building for community organisers, design and maintenance of water harvesting and soil and moisture conservation measures for engineers. In the subsequent BTC that was conducted, emphasis was given on conducting village level training and how to incorporate gender issues in watershed planning. In spite of all these efforts, there were some difficulties in convincing the PIAs especially the line departments to have women community organisers and also send the staff for training.

Various efforts were also made internally during this phase to make the training more effective. The effectiveness of the inputs was judged by the users to ensure that trainings helped in better implementation of the planning. Though inputs were given on issues related to processes like design and survey for watershed interventions, many a times, these could not be implemented by the PIAs since they mostly remained focused on meeting quantitative targets around completion of a watershed activity, instead of on the qualitative achievements and processes involved. Often, this was due to the lack of understanding of the processes by the officials who supervised these projects. In order to address this issue, the BTC programme carried out a review of the work undertaken by the trainees of the BTC. This was done both during and at the end of the training. The trainees were also asked to prepare their own action plans which were presented to district level officials and PIA leaders to help them understand the nuances of the work and to seek their support.

In 2002, SIRD formed a state level committee to which DSC was invited as a member. The committee was formed to resolve training issues and also to see how agencies will gear themselves for the Hariyali programme that had to start in Gujarat during 2003. DSC on its own had also been conducting workshops in the allotted districts with regard to the new Hariyali Guidelines which differed from earlier watershed guidelines in that they, for the first time, recognised the Panchayati Raj Institutions (PRIs) as watershed implementing agencies. The guidelines were to make the Panchayats as PIAs and hence required orientation of the people's representatives on watershed planning and management.

Back office preparation: The unit responsible for back office preparation within DSC consisted of a team of five persons, which included two full-time trainers and two subject matter specialists who provided support during the training programmes on technical interventions and gender issues. The team also had support of a person whose work was management of logistics and finances. There was much work before, after and during the training. The work included taking care of correspondences, coordination with district administration, preparing reading material, evaluation of the feedback received on trainings and providing hand holding support to the advisory committee of the partner organisation at the district level. Since in the initial years, DSC did not have a training centre of its own, a lot of time and effort went into hunting for a venue that had enough space for conducting sessions as well as lodging and boarding of the participants. Over the years, DSC also developed a pool of resource persons who hailed from voluntary organisations, government departments and educational institutions. These resource persons would conduct specialised sessions during the training for which one needed to ensure that they were adequately briefed and the support they required in terms of transport, lodging and boarding etc. was taken care of.

Participatory methods were used extensively for the trainings. Before every training an analysis of the need and assimilation of the expectations and views of the participants was done as a regular feature by the trainers. The training team paid attention to preparation of sessions, providing relevant reading material, preparing cases, writing scripts for

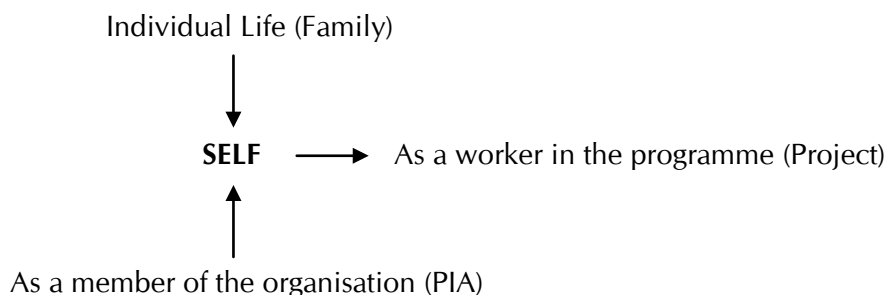
role plays, collecting relevant films and dividing their responsibilities as main trainer and co-trainer. About 14 different methods including group discussions, role plays, mock exercises, practical exercise and exposure visits were used to keep the interest and momentum of the participants going. Similarly, presentations by experienced WDT and WDC members helped in motivating the participants on what was possible. This also enabled them to know the likely issues they could encounter during implementation. Follow-up was done with the participants to help assess the effectiveness of inputs when the participants faced real life situations. This involved post-training identification by DSC of gaps which existed at the institutional level-PIA and/or DSC as well as in the processes and helped it improve them.



As the BTC progressed, the training sessions also evolved. The training sessions today provide inputs which help develop the perspective of the trainees on many issues at the personal, professional and programmatic level. These include sessions on understanding the role of *Panchayats*, WASMO for drinking water, team building, conflict resolution and quality maintenance. Similarly, special inputs on animal husbandry have also been added to address the need of a significant number of stakeholders - the Maldharis (cattle grazers). DSC has taken support of agencies like Unnati and BAIF to carry out specialised sessions on Panchayati Raj and animal husbandry. The BTC also undertakes gender sensitisation of the trainees through a five day gender training module for PIA leaders. The BTC gives utmost importance to ensure 'participation' of the people, especially the economically, socially and politically marginalised in watershed. It sees participation not as a method but as a basic value. Therefore during the training, the participants are taken through an understanding of the various facets of participation and its application in their day to day lives. They also understand the concept of power relations associated with 'participation' vis a vis their own personal relationships, in the family, in the organisation and in the community. For example, if one is not willing to let

a female member in his family go out for work, her participation in the project or the decisions of the implementing agency is not possible. Therefore, attitudes need to change at the individual level (See figure 1 below).

Fig. 1: The triad of participatory approach



An important aspect of BTC has been its role in research and advocacy. As work progressed, the participants brought out issues that they had been confronting to the plenary of the training. Several of the issues that came up during the course of training led DSC to initiate research on them. For example, to what extent, watershed interventions were resolving issues of drinking water in the villages, what were the costs and benefits to the people and whether these benefits were being equitably distributed were researched in detail and thereafter formed part of DSC's agenda to push for reforms and policy change.

When the programme started, a significant part of the cost of the programme was borne out of the funds that DSC managed to obtain from donors such as the state government and the Aga Khan Foundation. The scenario has changed and under the current Integrated Watershed Management Programme (IWMP), a WDT is validated only after it has undergone a BTC. This has ensured that the training receives adequate grants from the government, which cover the costs of the training, food, stay and faculty fees and also takes care of the basic overhead costs. DSC has been consistently striving and making efforts to improve the quality of training. DSC also constructed its own training centre for conducting training programmes. Besides conducting short term courses, DSC has conducted a total of 32 BTC programmes that provided training to 767 participants.

Outcome

The training has been running for more than a decade during which It has evolved from a few days module to a full-fledged one of four weeks with another two weeks of field work at the trainees own field location and now for two weeks for the IWMP programme. During this period, there have been significant outcomes as highlighted below:

At the WDT level The BTC has enabled the WDT members to develop a common vision for watershed development and gain clarity about their respective roles and responsibilities. It has helped them to introspect on their own values, attitudes and behaviour vis a vis the rural communities. The use of participatory techniques and approaches has been able to facilitate participation of those who never get a chance to get included given their social

and economic background. This has led to a significant change in the way they interact with the rural communities, especially women and the efforts they make to include them in the process of decision making and their capacity building. There are instances where positive change has been noticed in the attitude, skill and knowledge among the trainees who attended the training. They have since changed their approach from 'working for' the community to 'working with' the community. The trainees today believe in consulting the community, sharing with them their analysis of the data and coming to a conclusion after the community has agreed to the situation. These are seen in the methods they now apply while they prepare the Detailed Project Report (DPR) as also when they undertake the planning, implementation and evaluation of the work done. The BTC has also led to improved knowledge of the watershed concept, its relation with livelihood enhancement, role of village institutions, technical aspects such as site selection and quality implementation.

At Watershed Scheme level: Compared to districts other than where DSC had conducted the BTCs, the release of the funds for the watershed program had been higher. The well trained WDT teams have been able to implement the programs better which has led to higher disbursement of funds. They have also enabled the community to develop their capacities to effectively implement the programme and manage their finances. An independent evaluation by the Dhan Foundation showed that the quality of work implementation, solidarity, as well as functioning of the Watershed Association Committee leadership were excellent.

At policy level: DSC has been able to push the gender agenda when they got the Government of Gujarat to issue an order making it compulsory to involve women as members in the Watershed Development Team. The order also had a penal provision which deterred the PIAs from not recruiting women. Those PIAs who did not follow the order mandating recruitment of at least one woman in the WDT and sending her for training were liable for penal action.

Similarly many PIAs were sending WDT members for training after the work had reached the mid stage. This was brought to the notice of the government. It is now compulsory for all PIAs to send the WDT member for training within a period of six months. The penal provisions also apply to the members who do not attend the training. The member has to part with 25 percent of salary if s/he fails to attend the BTC within six months of his/her joining. The selection process for WDT members also gives weightage and preference to those candidates who have undergone a BTC.

Outreach: The four week BTC covered a number of topics such as institution development, technical aspects and financial management. This led to development of reading and communication material within the organisation. Such reading and communication material was thereafter not restricted to the participants of the BTC alone. It was during this period that DSC developed a simplified version of the national guidelines and also developed two video films "Lalak" on community organising and institution development and "Jal Jivan no Dhabkar" on physical interventions in watershed

management. These were widely disseminated to other training institutes and PIAs not just in the Gujarat but other states as well.

Today the BTC has gone beyond Gujarat. The Government of Rajasthan has given emphasis on a two week BTC in its capacity building guidelines. Similarly, the Western Orissa Rural Livelihood Project (WORLP) in Orissa has also adopted the BTC module. At the invitation of the World Bank, DSC conducted a two week BTC for its officials in the Local Empowerment and Environmental Management Programme (LEEMP) in Nigeria. The guideline of 1994, the improved guideline in 2001, the Hariyali scheme in 2003 and IWMP scheme in 2008—all have given emphasis on capacity building of functionaries. Other donors such as GIZ and the National Bank for Agriculture and Rural Development (NABARD) have also recognised the need to provide at least a two week module that provides a basic understanding of watershed development to the implementers of the programme.

Learning

At one level, one can say that the BTC is like any other course that is offered by any institute conducting training programmes for watershed management. However, the manner in which DSC has conducted the 32 training programmes brings forth some very unique learning.

Trainers should also be practitioners: The realisation that dawned early was to make the training relevant for the practicing community. With DSC also being an implementing agency, it could relate with the challenges in the field and build a relevant training curriculum. In order to keep the contents relevant and up to date with the policy and also with the new sets of challenges being experienced at the field level, the training team spent significant time interacting with practitioners and also soiling their hands. This was possible in the case of DSC, as it was itself a PIA. Also important was to keep interactions alive with all kinds of stakeholders, particularly the government. Selecting external resource persons based on their field experience also helped as they could relate with the problems faced by the participants and discuss “doable” options that they themselves have tried or those that have been tried elsewhere.

A module of this nature cannot be static; it must evolve with time: With the changing approach of policy makers, the field realities and the findings derived from the various studies undertaken, necessary changes were made in the module. Some of the new vistas that the module took to for example, were incorporating the Panchayati Act and mechanism with the Hariyali Guidelines in 2003, incorporating the agenda of drinking water in watershed after the realisation that watershed work has not helped in removing the problems encountered by women in getting drinking water and recently including sessions on various interventions related to livelihood enhancement, entrepreneurship development and use of Information and Communication Technology as an integral part of watershed management. This was necessary as the 2008 IWMP watershed guidelines give importance to livelihoods and have earmarked a financial

allocation of 22 percent to livelihoods. Had the BTC not been incorporating these approaches, the module by now would have become redundant.

BTC is not just training - it is education: BTC looked beyond development of skill. It looked at engaging the professionals into a process of value building in one's life where they did not learn only about watershed, but also about their own self and impact of their attitude and behaviour on others. Thus the trainees developed sensitivity and awareness about the environment and the society they are living in. At the same time, they also developed documentation and presentation skills. Thus, besides increase in knowledge and skills, the BTC helped them evolve at a personal level as well.

Long term gain v/s short term benefit: It is often seen that policy makers are reluctant to give time and resources for a module such as the BTC. Many think that practitioners such as the WDT would not be able to spare a month/two weeks for such a course. What they do not realise is that lack of training would be counterproductive since an untrained WDT can cause more harm in the long run. A basic orientation of the environment and social realities is essential if the team is expected to achieve the goals of watershed development and livelihood enhancement. Thus, the team needs to develop a common vision, strategy and skills for facilitating institutions as well as physical works which requires time. Short term, two-three day courses only help after receiving a foundation course such as the BTC.

Having said this, it is also necessary to invest in financial resources for providing such a BTC. The current costs of lodging, boarding, material and exposure visits would amount to Rs. 1000-1200/day/participant which would come to around Rs. 15,000-18,000/participant for a two week course. The IWMP guidelines provide 5 percent for institution and capacity building. With the realisation that the course has been contributing to the approach of watershed, the Gujarat State Watershed Management Agency has allotted funds for a two week BTC. However, it remains to be seen if other state governments also follow suit.

Conclusion

For any functionary in charge of implementing a complex programme such as watershed development, it is necessary that s/he develops requisite knowledge, skills and attitude. Developing watersheds by facilitating people's institutions and building their capacities is not easy. Thus a Basic Training Course or a Foundation Course that looks at these aspects in an integrated manner and helps the individual realise his/her own potential is necessary. Looking at the impact of the BTCs conducted so far it has been proved beyond doubt that right orientation of the WDT at the beginning of the programme helps in facilitating sustainable institutions at village level and also in developing the watersheds in an integrated manner. Barring Gujarat, there are not many states that have provided for a Basic Training Course for the functionaries of the watershed programme. A two-week BTC should be an integral component of the capacity building plans of the watershed programme in various states. To do this, the States need to also identify competent agencies that can impart such a course for their WDTs.

Notes

1. Investing in Capacity Building by Barbara Blumenthal, published by The Foundation Centre
2. Refers to a discreet way of giving a signal to somebody that he/she needs to listen more and advise less when interacting with rural communities. According to Anilbhai, tapping on a person's shoulder would send a subtle message to them to control their tendency to offer advice without understanding the issues completely.

Chapter 5

Harnessing Local Potential **Case of Farmers' Spear Head Team**

Nayana Choudhary

Introduction

In 1995, DSC initiated Participatory Irrigation Management (PIM) in the Dharoi dam of North Gujarat as a pilot project under the PIM programme of the Government of Gujarat. This project was huge in terms of the scale on which it was implemented - it involved 42,000 farmers covering 48,000 hectares of land¹ and aimed to bring farmers from the first village near the outlet of the dam to the last village of the command area under a cooperative structure. What made the task even more challenging was the fact that it had to ensure participation of all sections of farmers - marginal, small and big farmers from the villages of the entire command area. The following account narrates the strategy adopted by DSC to accomplish the gigantic task of transferring irrigation management from the Irrigation Department to the farmers' associations.

Context

In the late 1990s, the Government of Gujarat considered piloting PIM for improving the distribution of water for agriculture from irrigation dams. DSC played a proactive and key role in the process. One of the initial pilots was implemented in the Thalota village of Visnagar Block in Mehsana District in which DSC supported the Irrigation Department in establishing farmers' institutions known as irrigation cooperatives. It was easy to assume that farmers would be willing to organise themselves to manage irrigation water collectively, but the task proved to be quite challenging. Irrigation management was primarily the responsibility of the Irrigation Department, and farmers were excluded from the process. The poor condition of many canals, which were built almost 20 years ago, complicated matters. In most cases, the canals were in a dilapidated condition; therefore, mobilising farmers to form cooperatives with the aim of managing canals and ensuring proper distribution of water was meaningless since farmers would expect the repair of the infrastructure prior to this transfer of management. Many canals required a significant change in design, without which it was difficult to provide water to farmers' fields. Areas in the command of the canal where farmers had taken to unabated irrigation faced severe water logging, thus rendering many of the agricultural lands non-cultivable. In parts of the command area where water from canals barely reached, farmers were forced to rely on underground water for irrigation. However, they experienced difficulties with ground water since the water level was constantly on the decline and there was deterioration in the quality of the ground water.

Intervention

The transfer of water management to farmers was challenging. Fortunately, the village already had a successful example of a community-managed water distribution model around tube wells, in which group members had developed their own water distribution system, norms for water usage and cost sharing. This was a live example of the successes of the participatory method. Building on this legacy, DSC's field unit at Thalota began to mobilise people to promote participatory management of the canal system as well. Village members understood the significance of this issue and started to associate themselves with the canal irrigation cooperative. In 1995, the process of formation of cooperatives began. DSC conducted an assessment of problems related to irrigated agriculture, physical status of canals and issues faced by farmers in the head, middle and tail reaches of the canal system.

The very first year (when DSC started work in the area) witnessed good rainfall, which resulted in an increase in irrigated area. During this time, DSC's efforts were supplemented by those of the Irrigation Department, which had already completed the survey work and undertaken minor repairs and rehabilitation of the canal system. Following this, the flow of water through the canal improved and there was an increase in the command area as well. All these activities led to increased trust building with the farmers.

However, organising the farmers to form irrigation cooperatives proved to be a very slow process. It took almost six to seven months to help set up and establish an irrigation cooperative in a village. From 1995 - 2005, DSC established 50 irrigation cooperatives. However, this progress was far too slow, and DSC realised it needed a different strategy to cover the entire command area of 48,000 hectares.

In 2005, the National Dairy Development Board (NDDB) came forward with a proposal to support the establishment of more irrigation cooperatives. NDDB provided a grant to bring in as much area of the Dharoi irrigation scheme as possible under the control and management of farmers. However, this grant was time bound and the process of transfer had to be completed within the next three years. Around this time, community members began voicing this demand as well. In one meeting, farmers from several villages requested Sri Anil Shah, DSC's Chairperson, to expedite the work of formation of irrigation cooperatives in their respective villages.

So far, DSC had received funding support from donors and the Irrigation Department to establish irrigation cooperatives. However, the funds were small and the pace of work was also slow. There were other limitations as well. Since the pilot was unique, and with no agencies except DSC and AKRSP(I) in Gujarat involved in PIM, there was a paucity of a ready supply of human resources. New staff members had to be trained for this project. Also, post the Gujarat earthquake in 2001, the sudden demand for human resources for earthquake rehabilitation led many staff members to leave DSC. Therefore, it became imperative for DSC to adopt a different approach.

Anilbhai was aware of the case of Amratbhai from Thalota village, a local farmer who had been working extensively with DSC to motivate other farmers. Working with Amratbhai proved to be quite successful because farmers related to him very easily. Anilbhai proposed a strategic shift in DSC's approach to promote and develop more "Amratbhais" in villages. Instead of DSC mobilising farmers and supporting them in establishing irrigation cooperatives, it would be a far more effective strategy to involve farmers themselves in this process. Besides being more cost effective, DSC also realised that farmers would be much more accepting if they were approached by farmers from their neighbouring villages. In the last ten years of association with villages, DSC had worked very closely with farmers who were instrumental in managing their own cooperatives and providing support to other cooperatives in surrounding villages. Therefore, their experience-based knowledge was invaluable to expedite DSC's PIM agenda in other villages.

According to this new strategy, DSC initiated discussions with farmers that already had experience with irrigation cooperatives. The new strategy meant that experienced farmers from established cooperatives would initiate the dialogue to establish and handhold new cooperatives. The initial efforts were to establish the credibility of the organisation, build good rapport with the villagers and identify the leaders who could play a pivotal role in communicating and propagating the message of water distribution and management. To scale up its implementation and benefits, DSC created the Farmers Spearhead Team (FST) consisting of 11 members and trained them in PIM.

Formation of the Farmers Spearhead Team (FSHT): Mobilising farmers to associate themselves with DSC and thereafter perform DSC's role was not easy. While many farmers had experience in working with cooperatives, none of them had been involved in these tasks on a continuous and full-time basis. The expectation of yielding results, including equity in water distribution, made them wary. DSC was aware of these challenges and therefore cautious about the farmer selection process. It developed a set of criteria to carry out the selection (See Box 1)

Box 1: Selection criteria of the farmers participating in the Farmers' Spearhead

Team

1. Active engagement in the irrigation cooperative of his own village institution.
2. Active engagement in development work in his own village.
3. Functional knowledge of reading and writing and awareness of management functions associated with PIM.
4. Sensitive individual and interested in his community's progress.
5. Well known to DSC's workers with a credible history of work to inspire community members.
6. Representative of a village falling in the command area of the dam.

DSC applied the above criteria to begin the process of selection, and finally selected a team consisting of eleven members. It was an interesting mix of skill sets and talents that comprised the team. For instance, Haribhai was a good public speaker; Babubhai Patel was good at writing accounts and keen on developing new methods for distributing water; Natvarsinh Parmar was skilled in sensitising people about PIM; Dahyabhai Patel was a graduate and realised the importance of the judicious use of water; Dineshbhai was excellent in technical aspects of canal design. These varied qualities were of great advantage and laid the foundation for making this strategy a success.

Building the competence of the team: DSC entrusted the team with the task of mobilising and empowering community members to establish irrigation cooperatives. Members were trained on initiating dialogue with farmers, conducting small group meetings and addressing large gatherings. Every team member had a strong skill set. Team members were taken through a series of trainings and capacity-building exercises, which included several classroom sessions along with field-level practice sessions. DSC intended that each member was at the same level and all spoke the same language of development.



DSC decided to provide the FSHT with remuneration for its services. After examining the budgetary provision and discussing it with the team, an honorarium of Rs.150 per day was fixed for the number of days worked by each member. Team members were given additional funds to cover their travelling expenses to and from villages. Costs incurred by way of travel and time while attending the capacity-building sessions were also reimbursed.

Division of roles and formation of small teams: Next, the FSHT members were asked to re-group themselves into smaller teams. Each team was given basic responsibilities such as allocating their own area - both geographical and thematic - so that each smaller team

could pay attention to specific tasks. Initially, DSC prepared a programme calendar to assist the team, which detailed day-wise planning of preparation and discussion for team meetings.

Breaking the barriers: In the initial stages, members of the team were beset with apprehensions. For instance, Dahyabhai Patel was an educated farmer, but he expressed concerns about whether illiterate farmers would accept his ideas. Manibhai was illiterate and feared that the educated farmers would never accept any idea that came from him. He was hesitant to speak up in front of literate farmers. Haribhai Chowdhary was less educated but had experience in working with cooperatives, which gave him confidence. As a strategy, those who lacked confidence were teamed up with Haribhai.

Initially, field work to promote PIM was a challenging experience for the team. When the team approached villagers and initiated discussions to understand their conditions and difficulties, they had to address several doubts and questions posed by villagers. Some villagers were suspicious and assumed that the FSHT was involved in business activities. It took patience on the part of team to answer queries and dispel these doubts. Their public speaking abilities were put to test when every member of the team was encouraged to address gatherings and provide answers to queries raised by farmers. The strategy of learning by doing helped remove fears and broke the barriers that each harboured within oneself. Through persistent efforts, the team established camaraderie and collected first-hand insights about the status of canals and the numerous difficulties related to water distribution.

Gradually, team members began to put their lessons into practice. The team collected data and information about the village profile and conducted a participatory appraisal to understand the depth of the water distribution problem. These tasks were completed within the stipulated time frame of fifteen days with the level of detail required.

Case 1

In one instance, the FSHT visited Kahipur village near Chabaliya. After collecting preliminary information about the village, the team held a *gramsabha*². The meeting revealed that with farmers from the Patel community engaged in agriculture, other community members were deprived of the yield because the Patel community - which was in a dominating position - took away the harvest by force. The villagers requested the team to help resolve this conflict.

The conflict seemed to have had originated from the issue of water sharing. The Patel community, which had land on the upper reaches, used up most of the water. The distribution of water equally and with fairness held the key to the resolution of the problem. If the community in the tail end also received their share of water, they could practice agriculture and produce crops.

The FSHT suggested the formation of a Water Users Association (WUA) to take charge of proper distribution of water and ensure what water distribution was fair to all community members. The solution was accepted by the villagers and a meeting between the two communities provided the key to solve this problem. Today, the village has an irrigation cooperative and water is distributed with the intent that everyone receives an equal share of the water. The problem is now resolved.

Training the FSHT: Members were provided with training and inputs on various issues including data collection, data analysis, organising meetings, public speaking, street theatre and use of various audio-visual aids. They were familiarised with issues relating to cooperative acts and PIM. Capacity-building training programmes were hands on. After a video film showing, team members carried out mock discussions among themselves. These proved to be useful for conducting similar sessions in villages and prepared the team for facing the questions from the villagers. Street plays and folk plays like “Lok Dayro”³ were organised by the team with support from the local youths. Together, they composed and practiced the skit and then performed it in villages. The team was also trained in the management of village cooperatives, which included maintaining books of accounts, registers, water measurements etc. In turn, team members were responsible for the transfer of knowledge to cooperative societies. The team was also trained in organising and managing exposure visits for farmers. Through active engagement with farmers, the team instilled enthusiasm among farmers for PIM to overcome the farmers’ misgivings.

In all this, the role of DSC was that of an initiator, catalyst and facilitator throughout the process of building and strengthening participatory irrigation. Considerable efforts were spent on training and capacity building to strengthen the management of the irrigation system. DSC trained team members to take notes on their work and convened meetings of the team at regular intervals to understand the difficulties encountered by the team. As the work progressed, the meetings were able to discuss higher level issues since they had already resolved the simple issues independently. Monthly reports developed by the team provided inputs to develop capacity building programmes and further empower the team.



The role of the FSHT has helped increase membership in cooperative societies. Some societies showed that almost 70-80 percent of landed families had become members. The work also helped many villagers, who never saw eye to eye, collectively discuss common issues, which motivated the FSHT to promote PIM in more villages. More cooperatives began to be established and the idea of a federated structure of village level irrigation cooperatives was discussed. It was envisaged that these federated bodies or associations would play a more effective role in planning and managing larger issues with the Irrigation Department in the long run. The team went into action since the project was close to the end of the three-year period.

The project that had started with financial aid from NDDDB in April 2005 came to a close in June 2008. Before the project began, less than 10 percent of the command area was under irrigation cooperatives. In the first year, the goal was to cover 25 percent; in the second year, 50 percent and by the end of the third year the entire command. Today, almost the entire command is under cooperative societies and this has been possible because of the strategy of working through the FSHT. Their slogan "*Chalo Khedu, Uthavo Bidu*" ("*Come farmers, let's take the pain*") resonates across the entire command area today.

Further, five federations had been established in Dharoi, Guhai and Mazam irrigation area. These federations were registered bodies and representatives of the cooperatives at the village level. Today, these registered associations are involved in collecting irrigation dues from cooperatives and responsible for managing the repair and rehabilitation work of branch canals. The government provides them a 20 percent rebate on the irrigation fees levied and collected. The associations are cash-rich institutions since they are also involved with various other functions, which provide support to the member organisations.

Outcome

The FSHT promoted and increased the establishment of farmer-managed irrigation societies in the command area of Dharoi irrigation dam. Today, irrigation societies manage the distribution of water in the entire command area and the minors and sub minors canals. They undertake small repair and maintenance work before, during and after the irrigation season. They collect the water tax levied on farmers for obtaining water and fix water rates. In addition, they address conflicts that arise during water distribution and make sure that beneficiaries use water with a sense of economy. These institutions have truly been livelihood support institutions. Some of the other important outcomes of this new strategy include the following:

Developed cadre of irrigation specialists: The FSHT consists of people drawn from villages in the command area. Since the team members were farmers themselves and belonged to local villages, trust building with other farmers was easy. Community members realised that the team did not have a hidden agenda behind their involvement. As a result, many dysfunctional cooperatives were revived, including those that were formed in the initial days of action by DSC. For instance, the FSHT member Natvarsinh revived the cooperative at Dedasan village by identifying core problems and taking suitable action to resolve them.

Translated new learning into day-to-day affairs: The FSHT was directed to document their work on a regular basis. These writings were used as discussion notes during internal meetings with DSC. On the basis of their reports, DSC provided training and guidance. The writing of similar reports is routine and information is generated on a daily basis in all cooperatives and the five associations.

One-stop shop: Today, the cooperatives use capable people trained in various aspects of irrigation management, which has increased their efficiency. Many of them have moved beyond the irrigation management paradigm. For instance, the Thalota Cooperative is now responsible for providing fertilisers, seeds and pesticides to its members. These functions have contributed towards augmenting the members' well-being. The cooperatives are a one-stop shops that address the many needs of farmers.

Building relationships: Because the FSHT members are from the local community, they have been able to establish harmonious relationships with villagers and bring out collective solutions for local problems. They are active members of branch federations and contribute to its effective functioning. During the initial stages, members frequently visited villages developed relationship with farmers. They continue to maintain these relationships.

Going beyond Dharoi: Armed with the knowledge and experience gained from Dharoi, many team members work as resource persons in other irrigation projects. For instance, Natvarsinh, Ishwarbhai Patel, Manibhai Patel and Haribhai Chowdhary are resource persons providing support by way of conveying messages of PIM to officials and farmers of other irrigation schemes in Gujarat. They are also engaged in providing direct support to village level cooperatives of other irrigation schemes.

Managing water and livelihoods: Representatives of the associations are primarily engaged in undertaking pre-irrigation planning and post-irrigation review of the irrigation schemes with government officials. Farmers' opinion and their participation are important components of irrigation planning. However, in addition to irrigation, other uses of water such as drinking water resources are important considerations. Efficient use of water and knowledge of crops that grow under different water availability conditions are issues that form the basis of planning. The associations engage the District Agricultural Officers and the Irrigation Department Staff in planning for water release. This has been the hallmark of the process adopted to manage livelihoods.

Making the intervention cost effective: The strategy of involving farmers themselves to form irrigation cooperatives has proved to be cost effective. Earlier, the cost of establishing a society was approximately Rs. 0.12 million. Involvement of the local cadre brought this down to Rs. 24,000, one fifth of the earlier cost. Similarly, the time taken for formation of a cooperative has decreased by half from 7-8 months earlier to 3-4 months now.

Learning

The strategy to make experienced farmers take on the responsibility of forming irrigation societies was effective in spreading the message to all the villages in the command area of the Dharoi dam. This had yielded specific learnings, which are:

Capability of local people can be harnessed: Many progressive farmers are capable of motivating and supporting other farmers. Since they are local community members, it is easier for them to be accepted by the community. With the right guidance, information and training, one can mobilise and train them to spearhead tasks themselves.

Involve the stakeholders from the very beginning: It is crucial for beneficiaries and stakeholders to be involved since the inception of the task. Their local knowledge, insights and experience can help facilitate the process and be invaluable while planning and execution of the project.

Initiating action at the right time: DSC realised the importance of timing a process for better results. For instance, if the efforts to form cooperatives are initiated during the month of April or May, there might be fewer responses but once the rains come, it becomes easier to initiate dialogue. This is when farmers take cognisance of the need for water more strongly and hence agree to initiate action.

Conclusion

Engaging local farmers to mobilise villagers and establish institutions to manage water resources is the hallmark of this intervention. The FSHT has given shape to the vision of real farmer-initiated and farmer-managed irrigation cooperatives in a cost-effective manner. Collective action has ensured that institutions have gone beyond managing water and now responsible for providing support to many other farmer needs.

Notes:

1. Dharoi Irrigation Department records, 2005.
2. *Gram Sabha*: A word coined by Gandhiji which refers to representatives of all adults residing in the village.
3. "*Lok Dyaro*" is a folk art form very popular in rural Gujarat.

Chapter 6

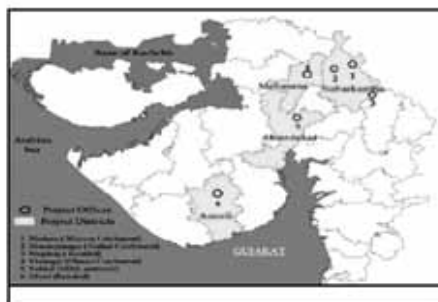
Jal Vikas Se Bij Vikas Tak

Case on Post Watershed and Post Irrigation Management Transfer

Mohan Sharma and Bharat Patel

Introduction

Since its inception in 1994, DSC has been working consistently to help farmers in Gujarat develop their livelihoods and experimenting with different strategies to identify appropriate solutions for agriculture-based livelihoods. The initial years of its work were largely devoted to providing farmers with irrigation facilities from the existing network of canals. DSC also worked extensively on soil and water conservation measures. Between 1995 and 2007, the organisation promoted more than 286 Water Users' Associations (WUAs) and helped promote more than 20 Watershed Associations (WAs) in the villages of Mehsana, Sabarkantha and Ahmedabad Districts in North and Central Gujarat and in Amreli District of Saurashtra (See map below depicting the areas of intervention).



More than 30,000 rural households have received benefits from improvements in irrigation infrastructure. Land development and moisture conservation activities undertaken as part of the watershed programme have benefited over 10,000 households. Farmers in these areas have benefited from increased production of biomass and increased their incomes due to enhancement in agricultural productivity and changes in cropping patterns.

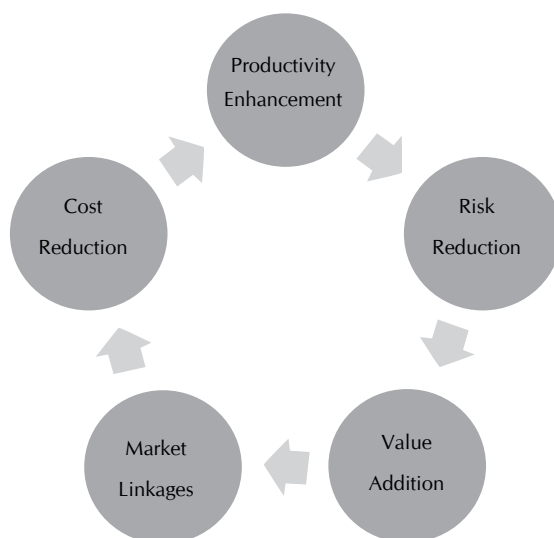
DSC's efforts during this decade shed light on the fact that while it supported farmers to increase their income on a sustainable basis, it also needed to diversify its interventions to agriculture inputs, credit facilities, weather information and improved crop management practices. In 2007, DSC devised a three-pronged strategy, which included:

1. Water Management [(Participatory Irrigation Management (PIM) & Watershed Development)]
2. Productivity Management (Agri Extension)
3. Farmer led Agri-Entrepreneurship (Value Addition and Marketing)

Impact assessment studies¹ performed by DSC in its PIM and watershed areas revealed that improved irrigation management due to better management practices of the WUAs and canal renovation increased the area under irrigation by 20-60 percent. The area under irrigation and under high value crops also increased by 40 percent. The productivity of crops like wheat showed an increase of 10-12 percent.

DSCs work in PIM and watershed development revealed positive results. While the increase in yield was small, it instilled a hope in DSC and farmer federations that efforts on the other two components held potential for a further increase in farmer incomes. Therefore, DSC decided to pay more attention to productivity management and agri-entrepreneurship development. It started to conduct dialogues with the office bearers of PIM federations in Visnagar, Himmatnagar and Modasa and with related stakeholders such as government departments, agricultural universities and donor agencies. DSC developed a project plan to engage in this work for the next three to seven years.

Figure 1: DSC's strategy for improving livelihoods post watershed and PIM interventions



The intervention narrated below is part of the new strategy that DSC initiated with support from the Royal Bank of Scotland (RBS) Foundation, India. The intervention included technical and institution-building interventions focusing on cost reduction, risk mitigation, productivity enhancement, value addition and marketing. It also provided for strengthening of social and human capital through institutional development and information sharing and capacity building of farmers.

Context

Gujarat has a total geographical area of 19.8 million hectares. Of this, about 9.6 million hectares are utilised for agricultural purposes. Agriculture continues to be the primary occupation of a majority of the state's population - it is estimated to employ over 52 percent of the labour force in the state, and account for 73.5 percent of total rural incomes². Gujarat also has the distinction of being a major producer of several crops. Groundnut, cumin, fennel, sugarcane, sorghum, pearl millet, rice, wheat, red gram (*tuar/arhar*) and black gram and a few cash crops like cotton and tobacco are grown on a large scale in the state.

Farmers in Gujarat practice a diverse set of cropping patterns both under dry rain-fed conditions as well as under irrigated conditions. Farming, however, is a gamble, since it is constantly affected by natural disasters including perennial droughts. Large tracts of land receive low and uneven rainfall. Other difficulties include high evaporation-transpiration rates, wind erosion laden with salts, climatic hazards, and marginal lands with low soil fertility and low moisture holding capacity. Only about 2 percent of the total land belonging to the poor receives irrigation supplies compared to that of 98 per cent of the non-poor³. Since a large number of farmers in Gujarat are small and marginal types holding small portions of land, the situation called for support from the government and Non-Governmental Organisations. The intervention narrated here was aimed at supporting agriculture through good practices that can be replicated across most of the 18,000 villages in the state.



Intervention

DSC used participatory assessment techniques to identify the challenges confronted by farmers. It conducted several PRAs with farmers at different locations and arrived at the conclusion that a majority of the farmers face problems like lack of availability of proper inputs, lack of scientific information and advice, lack of good quality seeds, market price fluctuation, lack of agriculture credit, poor soil health management, uneven and scanty rainfall and pest attacks. This contributed to a decrease in crop production and financial losses for farmers. The PRA exercises also revealed that the variance of yield ranged anywhere between 7 to 87 percent for different crops. For many of the cereals, the yields resulted in economic losses of between Rs. 350 to Rs. 5,300 per hectare.

From its field interventions, DSC was aware that farmers received low returns from growing wheat. This meant that the intervention that was required needed to address all of the four variables, i.e. productivity, prices, cost and risk, to bring in additional net income for farmers. DSC decided to intervene in the wheat sub sector. Following investigations, DSC found that a combination of factors led to losses in this sub sector. Farmers were using old and genetically degraded seeds besides following inappropriate crop practices. More than 80 percent of the farmers were using seeds, mostly of the “Lokvan” and GW - 496 varieties, that they had kept back from previous year’s production. Not many farmers had adopted high yielding varieties seeds. It was observed that farmers sold the produced wheat grains at the local Agriculture Produce Market Committee (APMC) at Rs. 1,000-1,100 per quintal. In most cases, the seeds that they bought were purchased as certified seeds at a price of 1,700 to 2,200 per quintal.

But even these costly seeds were not reliable in terms of germination percentage and varietal purity. The discussions around these issues within the canal federation gave impetus to DSC’s idea of engaging in a seed production programme as a possible intervention. DSC also decided to engage in promoting a scientific package of practices for the overall goal of increasing yield and profitable farming in wheat. With support from the canal federation, DSC embarked upon this twin initiative.

Pilot phase: As part of the process to help farmers, DSC embarked on activities centred on farm-level demonstrations. DSC provided support to the federations for initiating crop demonstration of new wheat varieties and also conducting demonstrations around a scientific package of practices. Among other things, this package included application of fertilisers based on soil test results, replacing old seeds with certified and newer varieties of seeds, shifting from broadcasting method to seed drill method of sowing and controlled irrigation during the critical stages of crop growth. DSC was supported by the Wheat Research Station at Vijapur to carry out this work. The canal irrigation federations at Visnagar, Himmatnagar and Modasa and the Krishak Vikas Producer Company at Dhari appointed local youths as extension para workers. These para workers were entrusted the responsibility of monitoring crop demonstrations, facilitating exchange of information between farmers and scientists and following up on technical advice received by the farmers from agriculture experts. Agriculture experts from DSC carried out extensive capacity building of these para workers. About 20 para workers were engaged in the process in over 150 villages at a fee of Rs. 100-150 per day. Over 660 demonstrations were conducted during 2008-09 and 2010-11.

Selection of farmers for demonstration: As per its working protocol, DSC did not approach the farmers directly but facilitated the process of their selection for demonstration through the federations. The criteria developed by the federations for selection of the farmers are outlined in Box 1 below.

Box 1: Selection criteria for farm demonstration

1. The farmer has to be a member of a village institution of the respective federation.
2. Preference will be given to small and marginal farmers.
3. The farmer should be progressive in nature and willing to adopt new practices. The demonstration plot must have good road connectivity.
4. The farmer will have to pay a registration fee for undertaking the demonstration.
5. The farmers' field should have good soil and irrigation facilities (since wheat requires irrigation).

Selection of variety for demonstration: In consultation with farmers and scientists, DSC selected three new varieties of wheat to demonstrate, GW-173, GW-496 and GW-322, which were developed at Dantiwada and Junagadh Agriculture Universities. DSC provided the seeds, culture and seed treatment material to the farmers. A total of 48 quintals of certified seeds were purchased and given to 160 farmers for demonstration. These farmers hailed from 56 villages. Beneficiary farmers were responsible for all other inputs which included irrigation, labour, fertilisers and pesticides. Farmers were also taken on exposure visits to the research station and participated in a number of workshops before, during and after demonstration with the scientists. The demonstrations were successful in motivating other farmers to accept the new varieties and also enabled those attending the field level trainings to understand crop management practices. A practice of seed treatment with bio culture, which was not in vogue, was accepted by many farmers since it provided a safeguard to the crop and helped in reducing the cost of cultivation. The demonstrations provided some very specific sets of practices (See Box 2 below)



Box 2: Broad areas of demonstration

1. Farmers were advised on application of fertilisers based on soil test results.
2. Farmers were advised to replace old seeds with certified and new varieties of seeds.
3. Farmers were shown the advantages of shifting from broadcasting method to seed drill method of sowing.
4. Farmers were advised on irrigation and the interval necessary between two bouts of irrigation. For example, irrigation during critical stages like root development, vegetative growth, flowering and grain formation were discussed as part of the demonstration.
5. Farmers received guidance on crop protection measures to be adopted throughout the crop duration.

The wheat demonstration during the Rabi months of 2007-08 was a great success where farmers were able to reduce the cost of cultivation by Rs. 2,000 per hectare as well as increase production, giving them an additional income of Rs. 4,000-12,000 per hectare.

The seeding of the idea: Although the demonstrations were successful, DSC was aware that the process needed to be hammered in further. It wanted to scale up the demonstration to around 1,500 farmers the very next year. The federation realised that 45 tonnes of seeds was required. Such a large quantity of seeds was difficult to obtain since demand was higher than the supply. In the previous year, the 160 farmers who participated in the demonstration process, had produced 160 tonnes of good quality wheat, about 60 percent of which, i.e. 90 tonnes, had the potential to be used again. This was a win-win situation for both DSC and the federations. Instead of purchasing seeds from the market, the local procurement, processing and distribution of wheat seeds would add value and result in better price realisation for the farmers. By this time, the Director of the Wheat Research Station had already confirmed that the wheat produced from the 160 demonstrations was fit for seed processing. DSC therefore decided to use these seeds again.

Consolidation phase(technical research before seed processing): Both DSC and the federations had no prior experience in the intervention around seed processing and marketing. Therefore, capacity building of the field workers of DSC as well as the federation was necessary. DSC arranged a series of exposure visits of the team to the Wheat Research Station at Vijapur and Dantiwada Agriculture University. The focus was on understanding the concept and technology behind seed processing followed by meeting officers from the State Seed Certification Agency to understand the legal aspects of seed certification and licensing. Seed production included three broad areas of intervention :

- i) Scientific wheat cultivation,
- ii) Post-harvest management
- iii) Seed processing and marketing

Since DSC wanted the activity to be taken up on an entrepreneurial model, providing inputs on conducting business was important along with providing technical advice. Working with the federation, DSC prepared a detailed business plan for procurement and processing of seeds by the producers, which focused on estimating the feasible physical and financial targets for the seed processing business. This exercise enabled the federation and DSC to identify grey areas like lack of managerial and investment-making capacity of the farmers and accordingly develop plans for mobilising physical and financial resources to make the venture a profitable one.

Selecting the variety for seed production: The wheat research stations possessed a wide range of seed varieties which were at different stages of development. In most cases, nucleus seeds and breeder seeds were available with the scientists at the research stations. The universities or private agencies developed the foundation seeds from these breeder seeds, which would undergo through the standard certification process laid down by the Government Seed Certification Agency. Seeds that were developed from the foundation seeds but did not go through the formal government certification process were sold as “truthful” seeds. It was important for DSC to decide which variety of seed it would select to produce.

In the first year of its work, DSC provided seeds for demonstration to farmers. These seed demonstration farms were not registered with the seed certification agency and therefore it was not possible to label the seeds with certified tags. The only opportunity that was left was to develop the seeds so produced as “truthful” seeds. After receiving technical information and guidance from the agriculture experts and the seed certification agency, DSC and the federation decided to start seed production with the “truthful” seeds.

Grounding the “truthful” business: In response to the demand for around 45 tonnes of seeds for 1,500 farmers during the next season, two federations from the irrigated areas of Visnagar and Modasa requested DSC to take up pilot seed processing during 2008-09. These federations, were till then, only engaged in water management. For them, the seed production business was entirely new. They did not have enough working capital to invest in buying the seeds and keeping them for the next year. Also, they were ill informed about agri-business management and how to participate in it. However, DSC’s seed demonstration initiatives had amply showcased the benefits of the seed production business, which motivated the farmers to go ahead with the idea. Two para workers along with the office bearers of the federations were entrusted with the responsibility of managing the business with DSC and providing hand holding support to the farmers through its own team.

The Irrigation Cooperative Federation of Branch Canal in Visnagar and Vadnagar talukas of Mehsana District had qualified with 25 wheat demonstration farms as seed plots. These farmers had produced around 16.67 tonnes of wheat. The federation had also prepared a business plan for procurement, processing, storage, packing and marketing at the block level. The federation estimated that it would require a working capital of Rs. 0.24 million to pilot this activity. The seeds were procured at the rate of 12.52/kg, which was

the highest prevailing market price being offered to the farmers at the market yard. The federation thus required an amount of Rs. 26,560 at the rate of Rs. 1.60/kg for processing the raw seed.

The federation had Rs. 100,000 to contribute towards this initiative (it had earned this amount as commission for the irrigation collected by it). On DSC's suggestion, the federation leaders organised a meeting for passing a resolution for this activity and thereafter requested additional financial support from DSC. An MoU was signed and DSC provided a short-term loan of Rs. 100,000 besides providing grant support to the federation towards meeting some of the costs for cleaning and grading of the purchased materials.

Prior to the initiation of the demonstration plots, the federation carried out verbal agreements with its member farmers for seed production. The technical staff from the federation carried out the supervision of the plots throughout the season. During the first year, around 20 percent of the seed plots where farmers grew the wheat were rejected as these farmers did not adhere to the quality parameters that were laid down by the scientists. These farmers were de-motivated by the loss but the para workers, under the guidance of the scientists, tackled the problem the following year through emphasis on building the capacity of the farmers and by rigorous follow-up and intensive monitoring of the plots.

The wheat crop harvested was threshed by the farmers at their farm. The technical staff verified the quality of the seeds before procuring them. The farmers received a down payment of 50 percent of the prevailing market price. The federation then transported the procured wheat to the local godown. The federation initially had the idea of cleaning and grading the seeds using a mechanical process. However, with less quantity of seeds, this was not feasible. As a result, the seeds were cleaned and graded manually and with the use of power-operated fans and hand sieves. DSC also provided support to the federation in procuring plastic-coated jute bags for packing. The federation considered giving a brand name to the seeds but ultimately decided to sell seeds the name of the federation itself. After the grading process, the cleaned seeds were packed and sealed in the jute bags weighing 30 kg each. The seeds were sold as truthful seeds.

Both DSC and the federation harbored apprehension about the minimum germination percentages and the genetic purity of the processed truthful seeds. Therefore, a laboratory test was conducted at a government laboratory in Gandhinagar in 2009. The results were very exciting - they established that on both counts, the seeds produced were much better than those available in the market. The germination rate was established at 95 percent whereas the genetic purity was at 98 percent. These two pieces of information were also marked on the bags. In the godown, the seed bags were fumigated once every month and were also treated with other insecticides and pest control chemicals to avoid any damages. In addition, the seeds were insured with the New India Assurance Company against perils like theft, fire and water damage for a six-month period starting from the day they were transported to the godowns.

The processed seeds were later sold during the months of October and November, just prior to the sowing season. The federation sold the entire quantity of seeds at a fixed

price of Rs. 13.30/kg for the member farmers and Rs. 16.67/kg for others. The federation produced 16,630 kg of truthful seeds with a processing loss of 42 kg of grain. It sold the whole lot for Rs. 0.25 million. The net income from the business was Rs. 26,000 and hence it could book a profit of Rs. 1.19/kg. The federation decided to disburse these profits to the seed growers in proportion to the seeds that they had sold to the federation. A small amount of the profit was held back by the federation for meeting future needs. After seeing the successful operation in the first year, DSC converted the loan amount of Rs.1 lakh to a revolving fund so that the seed processing business of the federation could continue without the worry for capital. DSC also provided a series of trainings to the federation secretary and manager on account keeping and auditing.

A review meeting conducted to examine the entire operation of the seeds business revealed interesting learnings. These were noted for improvement in future. The learning that emerged from the review meeting was:

1. The government is the largest purchaser and distributor of quality/certified seeds. In order to tap this channel, the federation decided to follow the procedural formalities laid down by the government for certification of seeds.
2. Business makes better sense if processing costs are lowered. Costs could be reduced in areas like transportation and processing and by having a decentralized storage system. Also a significant part of the costs could be reduced in this business if seed production was scaled up with a few large farmers. However, this intervention also needed to benefit a large number of small and marginal farmers even though doing this would be cost intensive. Therefore, the model needed to ensure that developmental goals and business goals were merged together to ensure both profitability and social responsibility.
3. The federation made the decision to have pre-season contracts with farmers whose seeds were to be purchased. The pre-season contracts would specify the price and quality standards, which farmers had to adhere to. The reason that the first year saw rejection of some plots was that farmers did not follow the verbal directives for production.

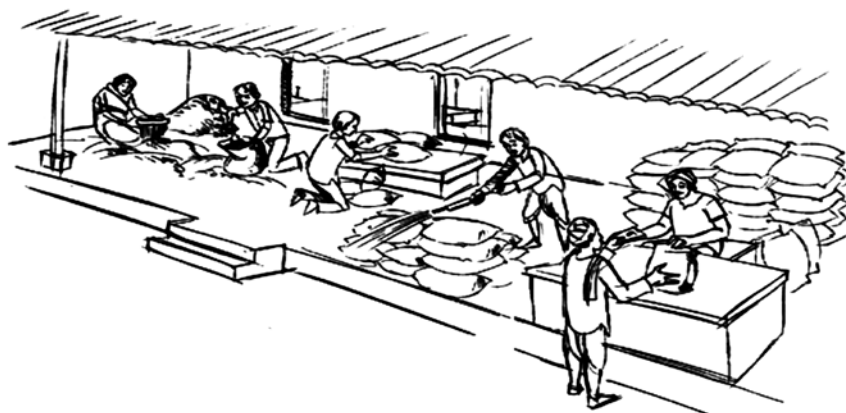
During the next two years, the federation could procure 5,220 kg and 7,500 kg of seeds respectively from the farmers by following the above strategies. The federation could reduce the cost of processing from Rs. 2.18 to Rs. 1.70/kg by cutting down costs on transportation, hiring of godowns and other related measures. The farmers also started cleaning and grading the wheat themselves before handing it over to the federation.

Scaling up phase - Moving from truthful to certification: During 2009-10, seed processing was expanded to a few other federations. The Guhai Federation of Himmatnagar taluka, Dhari Krishak Vikas Producer Company Ltd., Dharitaluka, Amreli District and Mazum federation also decided to start the business after they learnt about the same during their exposure visit to Visnagar. They prepared business plans for procurement of wheat from the on-going wheat demonstrations and DSC's agriculture experts helped

them to procure suitable seed varieties from Vijapur and Junagadh Universities for scaling up of seed plots. Agriculture extension para workers were identified and trained on seed production and crop practices for daily monitoring of the seed plots. DSC also simplified the Extension-Education-Information materials available at universities for educating farmers on appropriate crop practices of wheat cultivation. In short, the steps that were followed in Visnagar were replicated at the other three locations.

These federations also started exploring wheat varieties that required less water by contacting scientists across Gujarat and Madhya Pradesh. In this context, they identified a variety called “Sharbati” grown in Madhya Pradesh. The Sharbati variety of wheat usually fetches higher market price in Gujarat. DSC explored and procured a few other varieties that required less water. These seeds were in good demand and therefore, the federations procured more of these for multiplication.

Overall, the four federations together provided 270 seed plots of different varieties like GW-496, GW-322, GW-173 and MP Sharbati to farmers. A total of 75,082 kg of wheat was procured during 2010-11. Together, the federations produced 73,284 kg seeds, including both certified and truthful seeds. Of these four federations, two completed three years in the business whereas the other two were involved in the business for two years. The cost of seed production was Rs. 1.15 million, which included Rs. 1.04 million for wheat procurement and the remaining for seed processing. The four federations received a revolving fund support of Rs. 0.59 million from DSC. These federations were also provided grant support of Rs. 0.19 million from DSC for purchasing machines, tools, simple equipment and packaging materials. The Livelihood Enhancement through Participatory Natural Resource Management (LEPNRM) project provided a grant for purchase of basic equipment for cleaning, grading, packing and weighing as well as some percentage of recurring cost for the initial two years. Together, the four federations together sold seeds worth Rs. 1.30 million, thus earning a profit of Rs. 0.14 million. The processing cost of wheat seeds varied from Rs. 1.1 to 1.87/kg. The seed processing intervention was able to increase the market price of wheat by Rs.1.5-5/kg, thus giving a net return of Rs. 1.1-2.86/kg after processing.



In scaling up the business, the federations faced two major difficulties. Agricultural universities found it difficult to provide the foundation seeds for developing

the certified seeds due to shortage of their own stock as well as a lack of comfort level in dealing with a new organisation. DSC had to procure breeder seeds from the wheat research station for producing its own foundation seeds. The federations also faced several procedural difficulties in the form of delays and lack of technical know-how in acquiring licenses for production and supply of certified seeds. DSC and the federations constantly liaised with the District Agricultural Officers to address these complexities.

The federations in Mazum and Dharoi irrigation projects as well as the Producer Company in Dhari were able to develop in-house expertise and technical resources for processing, medication/treatment, packing and storage of wheat seeds. The Guhai Federation for irrigation has been subletting the whole process of cleaning, grading, medication, packing and storage. This federation has availed license from Gujarat Seeds Nigam Ltd. (GSSNL), for production and supply of processed seeds since the year 2009 -10.

Outcome

The seed production programme undertaken under LEPNRM project is an outcome of the demonstrations of the project in the initial days. With farm demonstrations, the farmers realised that following an improved package of practices will increase production. The engagement in seeds production and thereafter acquiring license and following the established protocol of certification has helped farmers to realise a higher price for their wheat crop. Some important outcomes of this intervention are:

Increased net income from the same piece of land: With land being a constant, the only possible way to give farmers better returns was to make it more productive. Trainings and inputs received by farmers from the para workers on a day-to-day basis helped them adhere to the improved package of practices, leading to enhanced productivity of the land. The increased yield helped fetch additional revenue of between Rs. 4,000 and 10,000 per hectare.

Results of Wheat Demonstration

Shrilqbal bhai, a beneficiary farmer from Vijapura of village Parabda in Himmatnagar taluka, produced 15.70 quintals of wheat from 0.25 hectares of land. Previously, he would produce 6-7 quintals on an average from uncontrolled plots following local practices and with seeds from home. In a workshop held at DSC, Ahmedabad on March, 12th and 13th, 2008, the group of participating farmers reviewed the status of wheat crop demonstration, its success rate, learning and its benefits. According to them, the per hectare additional benefits from cost saving and increased yield would be Rs. 2,000 and Rs. 12,000 respectively-translating to total benefits worth Rs. 14,000. This is a result of adoption of the recommended practices, introduction of new seed varieties, seed treatment, soil testing, controlled use of seed, fertilisers and pesticides and controlled irrigation by the farmers. If the farmers adopted collective seed processing, they could further earn an additional sum of Rs. 12,000 per hectare through value addition.

Reduced cost of production: Improved practices have helped in reducing the cost of farming by Rs. 2,000-3,000 per hectare as well. This has been due to the adoption of better crop practices under the demonstration programme. Farmers have understood that higher dose of fertilisers and seeds are often not needed. The trainings have helped in spreading awareness about the need to bring down doses of fertilisers and seeds.

Increased income as a result of seed production: The seed processing intervention has increased income by another Rs. 4,000 per hectare. This has been possible as farmers switched from being “traditional wheat growers” to “scientific wheat cultivator cum seed processors” running profitable business and improving professional capacities and skills.

Case 1

Thakor Pratapji Kuberji, a farmer from Sulipur, taluka Vadnagar, District Mehsana claimed that his agricultural yield had doubled from 2,000 kg per hectare to 4,000 kg per hectare. Also, he sold the wheat seed at Rs. 20/kg compared to the price of grain wheat that he once sold at Rs.12.50/kg.

Farmers feel confident about the seeds: There are more than 670 farmers across the four project regions who have adapted to processing of wheat seeds and reaped its benefits. About 50 villages of Visnagar, Vadnagar, Kheralu and Satlasana talukas have developed themselves as “Seed Villages”. Farmers feel confident about the seeds they are using since these have gone through all the quality certification checks.

Moving beyond just one seed: Farmers of Guhai Federation have been able to enjoy many other benefits as a result of the seeds certification programme. After witnessing the results of wheat certification, the Dhari Producer Company has embarked upon the processing of groundnut seeds which fetched them additional Rs. 6/kg. The producer company made a net profit of Rs. 15,000 through processing of 5,920 kg of seeds. The federations have tasted success and are now contemplating repeating the same with other crops as well.

Assurance of seed quality: The major benefit from certification and licensing of processed wheat seeds is the quality assurance that the farmers have. As producers of these seeds themselves, farmers are able to receive a higher market price for their seeds. The market price for wheat in Guhai region ranges from Rs. 12.50-15/kg whereas farmers who produce certified seeds can get up to Rs. 20/kg for the produce which is 30-60 percent higher. The Guhai Federation has even sold seeds at Rs. 22/kg in 2011.

Learning

The intervention has provided immense learning and insights, some of which have been instrumental in bringing about changes in the nature of the intervention itself. Some of these learnings are:

Certification of seeds pays the producers more: In the initial days, the federation produced seeds that were as good as certified seeds and had good germination percentage and varietal purity. However, these could not fetch the same price as certified seeds. The certification tag which comes from the government department proved to be a very important factor. The government (through the Food Security Mission and other similar initiatives) purchases certified seeds at a higher price and provide subsidy to the farmers. In this case, the seeds were purchased at Rs. 20/kg and reached the farmers at Rs. 16.50/kg. This made the federation sell their “truthful seeds” at a reduced price of Rs. 15-15.50/kg. They had to resort to this due to farmers’ preference for certified seeds over the “truthful seeds.”

Seed business, like any other business, has certain processing costs which if reduced can lead to higher profits: There were costs incurred in procuring, transporting, processing, storage, insurance and handling of seeds which amounted to around Rs. 2.18/kg. The costs were higher since the farmers were dispersed and so collecting a small quantity from each of them increased costs. The dilemma of whether the production should be carried out with only a few large farmers or with many small farmers is a debate that needs to be solved. The costs would certainly reduce if work of production is performed with a few farmers. However, the benefits are numerous if one chooses to work with many small farmers - each getting a better price for the produce. One therefore has to choose between business goals and development goals.

Have pre-season contracts with farmers whose seeds are to be purchased: The seed intervention, like any other business, requires a working agreement between partners. The federation had disqualified some seed plots on technical grounds during the first year since farmers had failed to follow certain quality parameters. Learning from this incident, the federation decided to have an MoU with the farmer members of the federation for partnership in the seed processing business.

Invest in building farmers’ capacity: Awareness generation and training to develop specific entrepreneurial skill sets for farmers is necessary for business development. This business model can only be successful if investments are made to help farmers adopt an improved package of practices (improved seeds, recommended crop practices). Similarly, grants - much like those provided by DSC with support from donors - are needed to fund training on how to add value and carry out processes like cleaning, grading and packaging.

Like any other business, this also requires business skills: Though the requirement of working capital in seed business is on the lower side and the technology is also very simple, yet the need for business orientation remains as strong as in any other business. A reason why federations made profits was because they had prepared business plans in advance, which was a crucial element in increasing operational efficiency and market competitiveness. Farmer participation in developing packing facilities, ensuring high product quality, using capital effectively and selling in the market enabled farmers to learn marketing skills. Federations are now empowered to take advantage of the opening up of market opportunities.

Those in the seed business must be well versed in government policies and procedures: The biggest client for seeds will always be the government. Hence, an understanding of government policies and procedures is important and critical. The certification process has a well-designed protocol and this must be followed as defined - no deviations are allowed. Farmers who are members of the association must also be aware of the protocol to ensure that it is met.

This business has its take off period: Practitioners realised that this business took off in the first year itself, but stabilised as it progressed. Farmer's institutions require a five-year period to get acquainted with the nuts and bolts of the business. Therefore, well-designed support from facilitating agencies is necessary for technical guidance vision building, fund mobilising, addressing bottlenecks and developing management systems. The first three years constitute the pilot phase and the next two years, the scaling up phase.

Conclusion

The intervention that moved from a simple agenda to a complex social business shows how livelihood programmes and interventions unfold. It also demonstrated that farmers and their institutions, if given the needed support, can lay the foundation to develop enterprises aimed at enhancing and sustaining their own livelihood concerns. The effort of an organization to shift from a pure "grant type" intervention to a more "business type" intervention is possible has been proved by this intervention.

Notes

1. Anil C Shah, 'Farmers as Managers', (2005); Garima Shrivastav 'Cost Benefits of PIM', (2007) and CFID, 'Impact Assessment of Watershed Programme on Tribal and Other Backward Communities in Sabarkantha District', (2006)
2. Sukhpal Singh, 'Risk and Productivity in Gujarat Agriculture: A region and crop specific analysis and strategies for improvement and diversification', (2008-09), IIM, Ahmedabad.
3. *Ibid*

Chapter 7

Joining Forces: Making a Difference

Dipak Rawal and Bhagirath Sathwara

Introduction

Gujarat has improved its record in irrigation substantially, ever since the state was carved out of Maharashtra in 1960. From 0.40 million hectares under irrigation in 1960, the area under irrigation by the end of the 10th Five Year Plan¹ increased to 4.2 million hectares. Repeated incidence of famines and food shortages in Gujarat required increasing agricultural productivity for which building of irrigation infrastructure became imperative.

Despite immense growth in irrigation infrastructure through large-scale investments, farmers' woes with respect to irrigation were far from being over. There was a huge disparity between the irrigation required and the quantity of water released to the farms from canals. Often, much of the water was consumed by the farmers at the "head" of canals and practically no water was available to the farms located at the "tail end". Large scale wastage of water along with degradation of land was common in many regions. Farmers in the command areas of most irrigation schemes were treated merely as "beneficiaries". Disputes between farmers and irrigation staff were increasing and it appeared as if there was no mechanism in place to resolve them. All these factors also reduced the collection of irrigation cess from the farmers. Poor planning in the management of water distribution led to inadequacies and corresponding reduction of the actual area under irrigation. Some studies show that the actual area under irrigation in Gujarat today is much lower than the command area coverage. A study by the Agriculture Department in Gujarat in 2009 claimed that only 34.4 percent of the possible irrigated command is under cropping². The situation of irrigation schemes in Gujarat was no better than the experiences in many other countries, as Barker and Mollé, describes: "...governments had tried to build irrigation from top-down." The norms of cooperative behaviour, community organisation and sense of community ownership that accompanied successful and long enduring communal irrigation systems in the hydraulic societies or in the Himalayan region, or parts of Philippines had no chance to evolve. On the contrary bureaucracies with little accountability to farmers and no incentive to improve management were empowered with the mode and timing of water distribution."³

This case records an intervention in which DSC collaborated with the Water and Land Management Institute (WALMI), a state-run institution, to involve the community engaged in agriculture in decisions pertaining to management of the irrigation infrastructure and management of water. The two agencies joined forces to help build the capacity of stakeholders to ensure better irrigation management. The processes that made this collaboration successful have the potential to be useful lessons for others.

Context

Development Support Centre (DSC) has been working as a resource organisation in Gujarat since 1994 providing knowledge-based support to Non-Governmental Organisations (NGOs), government agencies and other stakeholders in the field of natural resource management. It has played a critical role in introducing the agenda of Participatory Irrigation Management (PIM) to irrigation schemes. As early as 1995, DSC initiated an intervention on PIM by seeking participation of farmers in the Dharoi irrigation scheme. The early experiments established that involvement of farmers in decisions related to management and distribution of water resulted in an increase in irrigation area, tail end farms receiving their share of water and increased collection of irrigation tax. It also led to a reduction of disputes between farmers.

At the initiative of Late Shri Anilbhai Shah (the then Chairperson of DSC), a high level working group for PIM chaired by the Chief Secretary of the Government of Gujarat (GoG) was set up in March 1994. This working group was entrusted the task of reviewing and making operational decisions regarding PIM. As a result, the GoG established guidelines for farmer' participation in planning, implementing and operating irrigation systems. It also promoted the role of NGOs in catalysing and supporting farmers' participation in all irrigation projects of the state⁴.

Subsequently, DSC directly implemented PIM in 57,000 hectares of the Dharoi, Guhai and Mazam Irrigation schemes. The organisation began with forming water users' cooperatives at the minor canal level, then at the medium level and then bringing the entire scheme under PIM. During the 12 years of direct implementation, DSC focused on building the capacities of the farmers and the office bearers of these institutions to undertake roles and tasks to realise the full benefits of irrigation management transfer.

While capacity building is recognised as strength of NGOs, DSC chose to move out of this comfort zone. Instead, DSC decided to build a partnership with a government training institute, WALMI, to mainstream its acquired skills and knowledge. DSC realised that working with a government institution would not only enhance its credibility but also increase its outreach manifold through government infrastructure and network. Further, this synergy would lead to the establishment of appropriate knowledge networks to enhance and support know-how, expertise and best practices in PIM.

Intervention

During the 12 years of implementing PIM, DSC helped in setting up 216 farmers' institutions in the Dharoi, Mazam and Guhai Irrigation schemes, covering a command area of 57,000 hectares. These 216 irrigation cooperatives were set up right from the minor level. DSC also helped in setting up another five federations (which included these cooperatives at the minor level as members) at the branch and project levels. As the government started working on PIM, it identified other successful DSC projects which had yielded immense learning, and used these for similar interventions elsewhere in the state.

During 1995-2007, DSC undertook numerous capacity-building activities including training programmes, workshops and exposure visits for government officials, farmers and NGO representatives involved in PIM. Apart from building capacity on technical matters, DSC also sensitised these stakeholders on participatory development. It realised that transfer of ideas around water management and management of institutions was also critical. DSC developed and experimented with modules on water distribution, management of the cooperatives' accounts and so on.

With support from the Ford Foundation, the first round of training (using these pilot modules) was conducted for officials of the Irrigation Department in North Gujarat. These trainings generated substantial feedback about how to make them more effective. For instance, one of the suggestions was regarding the need to diversify the methodology at the level of planning and design of training. Similarly, there was another suggestion to develop a pool of resource persons to carry out training on a large scale. At the level of execution, it was realised that a single module could not be spread over too many days because farmers also had to attend to their farm work. Therefore, there was need to design compact training programmes. Over the years DSC also realised that the transfer of knowledge was a slow process and unless it was done repeatedly, PIM would be difficult. One could form institutions, but running them with efficiency and keeping them focused required continuous involvement.

Assessing training needs in PIM: DSC realised very early that if PIM had to be successful, adequate attention needed to be paid to training and capacity building. In 1998, a training group was constituted under the leadership of Shri Anilbhai Shah. This group, which consisted of trainers from DSC, resource persons from various state training institutes, NGOs, experienced farmer leaders and officials of the Irrigation Department, visited different irrigation schemes under PIM to identify critical training needs in PIM and developing training budgets. DSC's previous experience of conducting training in North Gujarat using pilot modules came in very handy during this process of identification of training needs. The group then submitted a set of recommendations to the government on the training that needed to be taken up under PIM.

The group also developed training modules for different levels of stakeholders such as Deputy Executive Engineers, Section Officers, irrigation cooperative members and other stakeholders. Government officials had to be oriented to this new way of working, i.e. how to enable the farmers to take charge of decisions under the new PIM arrangement and not just treat them as "beneficiaries" of an intervention.

In 2001, the GoG formed a Task Force to draw a set of recommendations for drafting a bill for PIM. Shri Anil Shah was invited on the Task Force team. Key recommendations made by the Task Force included the need for capacity building of those responsible for implementing PIM and the need to allocate adequate budgets for training and capacity building. This recommendation was accepted and is today a part of the government order on PIM.

After 12 years of having implemented PIM, DSC's commitment to making PIM work at the state level was more evident than ever before. It was already playing a role in influencing policy and training other NGOs working on PIM. The DSC training team had developed expertise designing the modules, preparing training material and training various stakeholders. The organisation was well poised to expand with its own training capabilities.

In this scenario, the first option for DSC was to seek funding on a much larger scale to meet the state-wide need for training different stakeholders involved in PIM. On the other hand, DSC could choose to partner with a government agency that already possessed the mandate and infrastructure to meet the PIM agenda. In the second scenario, DSC would have to develop a joint working mechanism with the government and influence the PIM curriculum and methodology to make for a more participatory model. DSC chose the latter option over the conviction that working directly with the government would help give PIM training more recognition and visibility.

During the Vibrant Gujarat Summit in 2009, where the GoG initiated efforts to promote public-private partnership, DSC presented its plan to collaborate with WALMI. Mr. V.B. Patel, a Board Member of DSC, consulted senior government officials to work out the details of the collaboration. After several rounds of discussions, WALMI and DSC became partners in offering training for PIM in August 2009.

Laying the ground: WALMI, a premier State Training Institute that imparts multi-disciplinary training in the field of irrigated agriculture, was established in 1980-81. It is renowned for imparting multi-disciplinary trainings to in-service Irrigation Engineers, Agronomists, Soil Scientists, and Extension Workers to enhance their knowledge and skills to work more effectively in the field of irrigated agriculture. WALMI has a well-maintained training infrastructure including hostel facilities, training halls, audio visual equipment and canteen. It also has a team of full-time faculty and administrative staff.

In 2008, a government order gave WALMI full charge of the portfolio of PIM training. Following this, WALMI was designated as the lead agency for training the officers and farmers involved in irrigation projects including the Sardar Sarovar Narmada Project. WALMI is a recognised name among Irrigation Circle officers, who at different points of time, have been trained by its faculty. DSC realised that joining forces with a reputed training institute such as WALMI would help synergize efforts of both organisations towards improving implementation of PIM in the state. The Director of WALMI took active interest in making this partnership effective and successful. The Superintending Engineers of the identified PIM projects in various Irrigation Circles were invited to speak to the Director, who took efforts to explain to them the special features of the partnership and the role everyone was expected to play to attain the goal of PIM. WALMI appealed to the state level Irrigation Department officers to play their role in making this model of partnership work. Responding to the request made by many of the engineers from the irrigation department, WALMI initiated the process of another round of systematic training needs assessment. A team from WALMI participated in regional meetings to receive inputs on training needs.

Finally, all the information was collated and findings of the needs assessment were presented to Superintending Engineers and to the Executive Engineers of the Irrigation Circles. This helped the senior officers become aware of the gaps in the training that needed to be addressed by the partnership. This exercise was crucial in ensuring that the training provided by WALMI would lead to effective changes in the implementation and over a period of time, secure the desired results in PIM.

Even after this phase of “laying the ground”, the WALMI senior team followed up with each of the Executive Engineers and other officers for planning before the training and for the specific invitations by the participants. The Director of WALMI, Joint Director (Training) and the Joint Director (Technical) made it a point to remain present on the first and the last day of the training and were available to the trainees during the training period for guidance and interaction. They also remained present for the sharing of experiences session after the exposure visit and for many field-level meetings. Their presence was a motivating factor for the farmers and field level irrigation officials.

Establishing the partnership: On August 17th, 2009, an inception workshop for the partnership was held at the Anand campus of WALMI. The workshop laid down the objectives of the partnership, and worked out the different roles to be played by DSC, WALMI and the Irrigation Department. The workshop was attended by senior representatives from DSC, International Water Management Institute (IWMI) and WALMI, along with chief engineers of the irrigation circles chosen for the project, executive engineers and other officials of WALMI. The members resolved that for the partnership to be realised in its true spirit, the planning and designing must be jointly undertaken according to respective skill sets of each organisation. No doubt, each partner would bring its respective strengths to the partnership and the challenge was to weave these strengths together. To aid collaborative working, WALMI allocated a separate cell within its premises for housing the DSC training team. The features of the partnership can be seen in Box 1 below.

Box 1: Key features of the partnership

1. WALMI and DSC will collaborate for a three-year partnership period.
2. Trainings will be based on the specific need of the stakeholder and the roles they have to play in PIM.
3. Exposure visits to successful irrigation cooperatives will be an integral part of the training course along with classroom sessions.
4. Trainings were the common *Sutradhar* tying various categories of PIM implementers PIM.
5. WALMI will bring its technical knowledge and skills while DSC will bring its expertise on the social aspects of implementing PIM and the changes required in attitudes and behaviour.

An agreement between WALMI and DSC was thereafter signed. This agreement laid down the responsibilities of administration and programme related management. The key elements detailed out in the agreement are highlighted in Box 2 below:

Box 2: Key elements of the agreement

1. A needs assessment will be undertaken while conducting the training programme by WALMI-DSC. This need assessment will guide the annual training calendar.
2. WALMI will be responsible for inviting the participants to the training.
3. DSC will be responsible for the preparation of the training modules and selection of the resource persons. DSC will also facilitate the training.
4. WALMI will provide the training classrooms, training tools and residential facilities for training.
5. DSC will appoint a team of three members, including one training coordinator, programme assistant and training logistics assistant. Their financial costs will be born by WALMI.
6. WALMI will cover the costs incurred by DSC towards developing the training content, design and implementation.
7. WALMI will provide office space and library space in the campus for working of the training team.
8. A Training review and Feedback committee will be constituted under the chairperson of the WALMI Director.
9. Together, DSC and WALMI will carry out capacity building activities in eight irrigation circles and cover between 50,000-60,000 hectares of the state area.

Conducting the trainings: In the initial phase of the partnership, a joint team of WALMI and DSC undertook a Training Needs Assessment exercise. The process was completed by visiting eight Irrigation Circles including Mahi, Shetrunjay and Panam in Central Gujarat, Ukai, Kakrapar and Damanganga in South Gujarat, Matchhu -1 in Saurashtra and Rudramata in Kutch and carrying out discussions with the superintending engineer, executive engineers and field staff. The needs assessment also included meeting members of existing irrigation cooperatives, visiting the irrigation sites and observing the account-keeping process of the cooperatives. Based on the information collected from the field visits, DSC prepared a report that highlighted gaps in all the three areas of knowledge, skills and attitude (KSA). There were certain policy level issues that had to be addressed for successful PIM. The details of the gaps that needed to be addressed through trainings are highlighted in Box 3 below:

Box 3: Summary of gaps notes in KSA and PIM knowledge

Knowledge

1. Inadequate understanding of participatory irrigation.
2. Inadequate understanding of the steps involved in the implementation of participatory irrigation.
3. Lack of understanding of government policy.
4. Lack of clarity about the role of various programme implementers.
5. Inadequate understanding of the requirement of people's contribution and its significance.

Skills

1. Poor skills of preparing proposals for registering irrigation cooperatives.
2. Inability to assess the quality of work required for reconstruction of canal.
3. Inadequate skills of administrative functions of the irrigation cooperative.
4. Inadequate skills related to preparation of budget for the irrigation cooperatives and calculation of water rates.

Attitude and Behaviour

1. Behaviour and attitude change was required so that the government officials and farmers were able to work together on PIM.
2. The lack of democratic behaviour and the necessary attitudes to work together often led to break down of the institution.

Policy advocacy issues

1. Allocation of local cess to irrigation cooperatives.
2. Representation of irrigation cooperatives in the advisory committee.
3. Joint membership of husband and wife in the irrigation cooperatives.
4. Financial incentive to irrigation cooperative for collection of irrigation fees.

This report was sent for discussions at all levels so that points of improvements, if any, could be identified before drawing up possible sets of design for training. Policy level issues identified in the report were discussed in a workshop held under the Chairpersonship of WALMI in October 2009. This workshop aimed to gather feedback and develop ideas on how training modules on each of the identified gaps could be envisioned. The superintending engineers from all the eight schemes participated and provided their inputs and recommendations. It was only after such an intensive preparatory phase, that the actual training programme started (See Annexure 1 for details of Trainings Organised under the WALMI-DSC Partnership in 2009-2010).

The key distinguishing features of the training programme included:

1. Farmers of the irrigation cooperatives presented their experiences as co-trainers in the training.
2. Participatory techniques were extensively used. These included group discussions, role plays and case analyses. This methodology ensured involvement of the trainees. Trainees were provided educational material to address their operational problems. These materials were made as user friendly as possible and were prepared in the local language using simple words.
3. DSC developed a pool of 30 resource persons, many of them subject matter experts.
4. Emphasis was given to both classroom teaching and field work. Field visits were an important component of the design.
5. Training modules were prepared based on the specific needs of trainees and on the parameters identified as gaps in skills, knowledge and behaviour.
6. Audio visual communication tools were developed, including posters, VCD and panels for promotion of participatory irrigation. Pre and post training evaluations were conducted for the trainees to ensure more serious participation from officers, especially for long-duration trainings.
7. Administrative and policy level issues, which came up during various discussions, were documented as part of the post-programme report. These were shared with the respective departments for action.
8. Training was funded out of the resources that WALMI received from the state government. The following budgetary provision was drawn out for the three years (See Table 1 below).

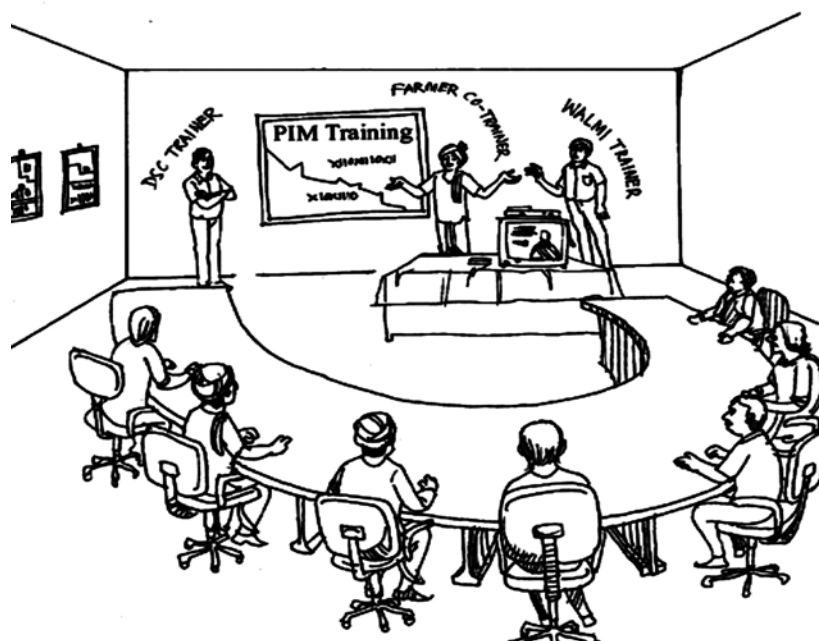
Table 1 : Budgetary provision for WALMI-DSC collaboration

Year	Amount in Rs.
First Year	2.040 million
Second Year	2.244 million
Third Year	2.461 million
Total for three years	6.745 million

During the first year, the number of participants was less than what was initially targeted. This was because farmers were initially reluctant to undertake training and irrigation officers very not fully convinced enough about the benefits of sending farmers for PIM trainings. This led to an increase in costs for DSC since there were certain fixed cost components such as vehicle rent, resource person fees, hiring of audio-visual equipment etc. which had to be borne irrespective of the number of training participants. However, DSC was granted the amount based on the number of participants attending the trainings rather than on the number of trainings they conducted. DSC discussed this issue with the

review and feedback committee. The committee took note of this and suggested that a more flexible approach should be adopted.

It was decided that the necessary expenses for training conducted would be charged by the organisation as fixed rate per programme irrespective of the number of trainees attending. The variable expenses like reading materials given to participants, accommodation and food related expenses could be paid according to the actual number of trainees participating in the training. This rule was applied from the second year. This method of recovery of the cost remained in practice even in the third year.



Communication materials developed by DSC, including the booklet on Participatory Irrigation Management, the video films on Kiyadar's experience and "*Jate Canal Sandhiye*" ("Let's Repair the Canal on our own") were widely used and disseminated. The *Divadandi* (Lighthouse) magazine and display panels helped in spreading awareness about natural resources management and rural livelihoods. WALMI has reprinted the panels and sent them to agriculture universities and relevant government departments for display.

Regular feedback mechanisms identified practical issues faced by practitioners while implementing PIM. Feedback revolved mainly around improving training modules, extending training durations and using training tools that communicated the message more effectively. DSC's regular interaction with the WALMI team through various forums supported the addressal of these issues. The suggestion on training farmers of cooperatives at their own locations rather than at WALMI premises was accepted. Similarly, the feedback on handholding also saw the acceptance of the companion approach and led to the appointment of a Sinchai Sathi (irrigation companion). These changes in delivery and

processes were possible due to the adoption of a collaborative approach. Exposure visits to locations of successful PIM resulted in practical learning that validated classroom inputs. However, although the partnership brought out positive results of this strategy, there were certain challenges faced by the partners during the course of working together. These are highlighted in Box 4 below.

Box 4: Challenges for the DSC- WALMI Partnership

1. Providing training to farmers in 1.8 million hectares under PIM in Gujarat under the same arrangement is a gigantic task.
2. Follow up mechanisms are critical. Training has its limitations since the engagement with participants is for a limited duration. Post-training activities are therefore quite significant. However, the process of feedback on implementation challenges is not yet operational, but has the potential to provide critical inputs for the improvement of the programme.
3. There is a need to introduce new innovations and applications implemented at different locations. Cases on these models, if documented, can help farmers and managers to draw inspiration from and practice them as well.

Outcome

The WALMI-DSC partnership led to very specific outcomes. These include:

A single step but a big leap: During the past 12 years of direct implementation, DSC was able to reach out to only around 200 farmers' associations. The collaboration with WALMI has helped DSC reach out to an additional 350 farmers' associations covering around 50,000 hectares in just two years.

This big leap was possible because of the support received from the government. In December 2010, DSC decided to organise a national level, multi-state workshop on PIM for which the Aga Khan Foundation provided grant support. Such a forum helped showcase the partnership model between DSC and WALMI and added value to the work of PIM in Gujarat as a result of experience sharing from other states. A total of 150 participants including senior government officials, representatives of irrigation cooperatives, other WALMI organisations and research institutes from five states attended the workshop. In addition to presenting the Gujarat model of collaboration in training, which was the main agenda, the workshop discussed best practices of PIM. These discussions inspired two states, Uttar Pradesh and Maharashtra, to show interest in similar initiatives in their respective states.

Farmers have begun to implement changes on their own: Exposure visits were a very effective learning tool during capacity building exercises. Out of the 181 irrigation cooperatives that visited other successful irrigation cooperatives, 90 have implemented changes on their own. Some examples can be seen in Case 1 below:

Case 1: A changed man unfolds a process

Mahumadbhai Jalabhai Badi, President of the Panch Dwarka Irrigation Cooperative in the Machhu Irrigation Scheme of Rajkot District, attended the training programme designed for the President and the Executive Committee members of irrigation cooperatives. Before attending the programme, he was unaware of the role of the irrigation cooperative and viewed it more as an agency that performed the Irrigation Department's work of cleaning the canals.

Things began to change once he attended the training. His views about the role of the irrigation cooperative were most influenced when he visited the Rangpur Irrigation Cooperative, which was a part of the training module. It was during this exposure visit that he could interact with the executive members of the cooperative.

On his return to his village, he organised a meeting of all the cooperative members and gave them glimpses of what he saw. The cooperative invited and held meetings with Irrigation Department officials as well. The society then initiated a joint survey of the reconstruction required in the canal. On the completion of the survey, the cooperative prepared the plan and estimate of reconstruction and had it sanctioned by the Irrigation Department, which then provided an amount of one million rupees. It also collected people's contribution to the tune of Rs. 60,000. On the basis of this the irrigation department released the first installment of Rs. 3, 30,000.

Learning

The two-year long collaboration has taught many lessons which are important for the organisation. These are:

Partnership succeeds when there is clarity of purpose: It is crucial that the partnership is built on a shared and common vision, and mutually agreeable principles. Partners need to be clear about and understand their roles and responsibilities and clearly define roles and activities of the partnership.

Patience, patience and patience: Even when there is a shared understanding of goals, the actual coordination between two agencies will always require patience. This is particularly so in the initial phases when both agencies are trying to understand each other and adapting to new ways of working. The government system is sometimes regarded as slow but follows a definite path of consultation before a decision is made. Civil society organisations may plan and work differently. The partnership process must acknowledge the existence of different working styles to meet agreed aims and objectives. Once this atmosphere of trust and respect is created, exchanging information and implementing plans will be a smoother process.

Establish a model first and then think about scaling up: The two years have enabled both agencies to see how the model works. They have been able to assess gaps, constraints and

opportunities for integrating new and existing water management actions, including the analysis of existing capacities and resources available for scaling up. After this two-year stint, the time is ripe for both agencies to develop a plan for future scaling up.

Commitment from the top helps: A strong commitment from the highest levels in the organisation helps in galvanising action from those down the hierarchical order. Partnerships can only thrive if such commitments exist.

Demonstrating flexibility strengthens partnership: Flexibility is an important aspect in a joint venture project of this nature - especially in the beginning - to respond effectively to the problems and challenges. Flexibility may be required in certain rules and regulations and financial aspects. WALMI's acceptance of the fixed training costs borne by DSC as well its open-mindedness towards both adopting DSC's design and delivery methods in its own independent training modules and suggesting changes in them further strengthened the DSC-WALMI partnership. There are other ample examples of how making room for each other helped to build the partnership between DSC and WALMI

Conclusion

The strategic shift made by DSC towards working with the government to build the capacity of irrigation officials has demonstrated that partnership among organisations with similar objectives leads to better mainstreaming of the agenda. WALMI, which was established to build capacity of the irrigation officials in PIM, worked closely with DSC which also had extensive experience in PIM, particularly in capacity building of PIM officials and cooperatives. Both agencies worked together and made efficient use of each other's skills, thus paving the way for GO-NGO collaboration. The outcome amply depicts the fact that such collaboration often helps in scaling up and makes for efficient use of resources.

Notes:

1. The Narmada Water Resources, Water Supply and Kalpasar Department put the irrigated area in Gujarat figure at 42.72 lakh hectares. However, the figure by the Directorate put it at around 33.47 hectares while the Agriculture Department in 2009 stated that of the total sown area, net irrigation takes place in under 34.4 percent.
2. [agricoop.nic.in/.../Gujarat Agriculture 11th percent plan.ppt](http://agricoop.nic.in/.../Gujarat%20Agriculture%2011th%20percent%20plan.ppt) - May 2009 as viewed on 5/11/11
3. Barker, R and Molle, F. 2004. Evolution of Irrigation in South and South East Asia; International Water Management Institute; Colombo; Sri Lanka.
4. Government regulation, Government of Gujarat, G.R dated. 1/6/95.

Annexure 1: Trainings Organised under the WALMI-DSC Partnership in 2009-2010

Sr. No.	Subject of Training	Participant Profile	Total Classroom Sessions	Total Exposure Visits	Total Trainees
1	PIM orientation training for work technical assistant Assistant/ technical assistant (with social aspects)	Work Assistant and Technical Assistant	3	3	113
2	PIM Orientation training for Assistant Engineer, Chief Assistant Engineer and NGO representatives (with social aspects)	Assistant Engineer, Chief Assistant Engineer and NGO representatives	2	2	57
3	Planning level training	Officials of Irrigation Department/Farmer Members	26	-	3356
4	PIM training for Irrigation Workers (Sathi)	Irrigation co-workers, Secretary of Irrigation Cooperatives	1	2	19
5	PIM training for Community Organiser	Community Organiser	1	2	19
6	Training for President and Executive Members	President and Executive Members	17	17	408
7	Follow up workshop with previous year's trainees	Officials of the Irrigation Department / Designated officials of the Irrigation Cooperatives	8	-	328
8	Trainings for members of the cooperatives	Farmer members	5	-	289
9	Trainings for Executives of the cooperatives	Executives of the cooperatives	1	1	28
10	Trainings for the Secretary of the cooperatives	Secretary of the cooperatives	2	2	56
	Total		66	29	4,687

Case Writers' Biographies

1. Manu Vadher is a Programme Executive and Team Leader of DSC's Modasa unit and manages various programmes at Modasa.
2. Rajendra Patel is a Programme Executive and Team Leader of DSC's Visnagar unit and manages various programmes in Mehsana.
3. Mohan Sharma is a Director (Programmes) at DSC and manages all of DSC's programmes including PIM, watershed management, agriculture extension, action research and policy advocacy.
4. Bharat Patel works with DSC's Visnagar unit as an Agriculture Specialist
5. Swomya Prakash was a Team Leader of DSC's Meghraj unit and managed various DSC programmes in Sabarkantha District.
6. Manju Ravi is a Programme Manager at DSC. She looks after gender issues, training, action research and policy advocacy related to drinking water and implementation of various programmes.
7. Gordhan Katariya is a Programme Executive (Training) at DSC and conducts training for watershed management professionals.
8. Nayana Chaudhary is a Community Organiser at DSC. She looks after women's participation in implementation of PIM and LEPNRM.
9. Dipak Rawal is a Programme Executive (Training) at the WALMI office of DSC.
10. Bhagirath Sathwara is a Programme Manager (PIM) at DSC. He looks after PIM training and implementation, policy advocacy and action research related to PIM.

DEVELOPMENT SUPPORT CENTRE

Development Support Centre (DSC) is a resource organisation that provides knowledge-based support to community organisations, NGOs, government agencies and other stake-holders in the field of natural resource management through training and capacity-building, research and policy influencing activities.

THE LIVELIHOOD SCHOOL

The Livelihood School is an academic institution promoted by BASIS group, a Livelihood promotion institution. The mandate of the School is to build up a scientific Knowledge Base on Livelihoods and disseminate the same to livelihood practitioners for enhancing their understanding and implementation capabilities, who in turn will promote large number of livelihoods.

AGA KHAN FOUNDATION

The Aga Khan Foundation (AKF) is a private, non-denominational, development agency, established by His Highness the Aga Khan in Switzerland in 1967. The Foundation seeks sustainable solutions to long-term problems of poverty through an integrated, community-based, participatory approach that reinforces civil society and respects local culture. In India, AKF works essentially in three thematic areas: Health, Education and Rural Development. It also works to strengthen civil society.



AGA KHAN FOUNDATION

