

Gender Issues in Water and Sanitation Programmes

Lessons from India

Edited by

Aidan A. Cronin | Pradeep K. Mehta | Anjal Prakash



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Gender Issues in Watershed Management

Suhas P. Wani, K.H. Anantha and T.K. Sreedevi

6.1 Introduction

The rain-fed areas in the semi-arid tropics are characterised by low and erratic rainfall, severe land degradation, low crop yields and high poverty. Watershed programmes are recognised as a potential engine for agricultural growth and sustainable development in rain-fed areas (Wani et al., 2003). The success and sustainability of watershed programmes are directly related to collective action and community participation (Wani et al., 2008; Sreedevi and Wani, 2007). Women are key players as managers and direct actors in managing natural resources in the watershed and addressing household food security and nutritional goals. However, too often, they play a passive role in decision-making processes because of their low educational levels, social customs and economic dependence. Though women share a major workload for managing the natural resources, the benefits of the watershed programmes largely bypass them, except where targeted income-generating and employment interventions have been undertaken (Sreedevi et al., 2009).

Increasing economic resilience of the poor is largely about enabling women to realise their socio-economic potential and to improve their life quality. Increasing women's participation in watershed management projects is critical to the long-term sustainability of development efforts. Since women rarely own or control productive assets, they are not looked upon as decision-makers in the management of natural resources (Seeley et al., 2000). Consequently, they do not receive their rightful compensation in terms of wages and ownership of productive assets and benefits accrued from them (Meinzen-Dick, 2004). In recent times, women self-help groups (SHGs), along with small savings, have unlocked a variety of avenues for income-generating activities (IGAs) for sustained income and livelihood opportunities (Anantha et al., 2009). These multifaceted avenues increase women's empowerment and system sustainability. Therefore, there is a

need to sensitise policy makers and project implementing agencies on the core issues affecting women's participation in decision-making processes and the fair distribution of benefits. We use detailed case studies from Andhra Pradesh, India, to analyse what are critical factors essential for enhancing collective action for impact of watershed programmes, resulting in improving livelihoods and conserving natural resources.

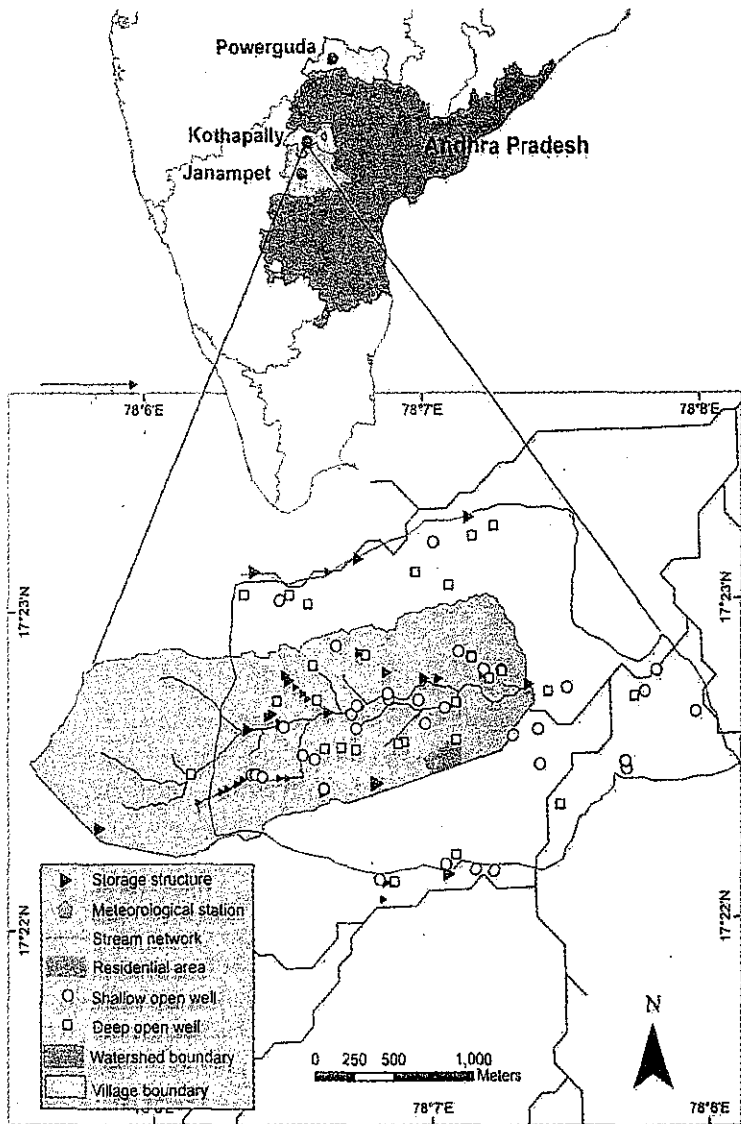
6.2 Studying Watershed Villages

Three watersheds in Andhra Pradesh were selected, namely Adarsha watershed in Ranga Reddy district, Powerguda in Adilabad district and Janampet in Mahboobnagar district (Figure 6.1). The selection was based on the criteria that affect the performance of the watersheds, including social background, differential interventions for livelihood improvement, institutional arrangements and focus of the watershed. In these watersheds, the management was with community-based organisations (CBOs) and women had significant role to play. These watersheds were studied in detail for the process and the impact as well as the drivers of the success (D'Silva et al., 2004; Sreedevi et al., 2004; Wani et al., 2002, 2003). The details of the selected watersheds are described in Table 6.1.

In all the three cases, focus group discussions (FGDs) were organised. A common questionnaire was used but separately for women and men's groups. The FGD interviews revolved around issues related to women, particularly in terms of rights, workload, decision-making, access to information and earnings, social capital development, nature of the institutions, drivers of the success, and the type of benefits accrued, and their distribution amongst men and the women members. Information documented included collection, compilation and analyses to study the relationship amongst chosen variables (participation, workload, decision-making, access to information, social capital, institutions, etc.) and the type of interventions and approach adopted for watershed development.

In Adarsha watershed, Kothapally, an International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)-led consortium adopted a farmer-centric, holistic, participatory approach for developing the watershed to increase the agricultural productivity and income. The meta-analysis of results and the interlocking constraints faced by farm

Figure 6.1:
 Location map of selected study of watersheds in Andhra Pradesh, India



Source: Garg and Wani (2012).

Note: This map is not to scale and does not depict authentic boundaries.

Table 6.1:
Profile of selected watershed villages for the case study

	<i>Adarsha Watershed, Kothapally</i>	<i>Powerguda, Adilabad</i>	<i>Janampet, Mahboobnagar</i>
Proximity to city	Yes	No	Yes
Social background	Mixed community	Tribal—homogenous community	Mixed community
Watershed interventions	SWC + productivity enhancement + limited IGAs such as vermi-composting, nursery raising and livestock rearing	SWC + limited IGAs such as oil extraction unit, nursery	SWC + commercial activities— <i>Mahila Samakhya</i> undertake financing, highway restaurant, etc.
Managed by	Women SHGs for specific activities + WC representatives	Women SHGs, watershed implemented by women	SHGs are federated under <i>Mahila Samakhya</i> commercial activities
Emphasis	Productivity enhancement	Service provider using NRs and technologies	Commercial activities for income generation

IGAs, income-generating activities; SHGs, self-help groups; SWC, soil and water conservation.
 Source: Sreedevi et al. (2009).

households prompted ICRISAT to launch strategic and on-farm development research. Meta-analysis is a methodology that collates research findings from previous studies and distils them for broad conclusions. There are several studies, which evaluated the performance of watershed programmes, and these studies were published either as research articles or reports. The watershed studies cover the entire rain-fed regions of the country and represent a wide range of environment according to their agro-ecological location, size, type, source of funding, rainfall, regional prosperity or backwardness and so on. The meta-analysis evaluated the impact of watershed programmes with the help of 626 micro-level studies to establish a higher degree of confidence in the analysed results for the comprehensive assessment of watershed programmes in India. ICRISAT-led community watershed work is based on the Integrated Genetic and Natural Resources Management (IGNRM) approach where activities are implemented at landscape level by the community (Wani et al., 2003).

Water management is used as an entry point to increase cropping intensity, increase productivity through enhanced water use efficiency, and also to rehabilitate degraded lands in the catchments, which helps in enhancing biodiversity, increasing incomes and improving livelihoods. Such an approach demands integrated and holistic solutions from seed to final produce. It involves various institutions and actors with divergent expertise varying from technical, social, financial, market, human resource development and so on.

In Powerguda, though the approach adopted was similar to the Adarsha watershed, it was distinct as the women SHGs implemented the watershed programme. Being a tribal area, the community had access to forest resources too. The Janampet watershed village is an advanced entity with the promotion of commercial activities for income generation. The SHGs at the village and *mandal* (block) levels have been federated and are known as the *Mahila Samakhya* Adarsha Women Welfare Society. This collectivisation has helped to increase women's bargaining power and branch out also into financial and political leverage. It also focuses on value-added services such as running a highway restaurant and other micro-enterprises.

6.3 Mainstreaming Gender Participation

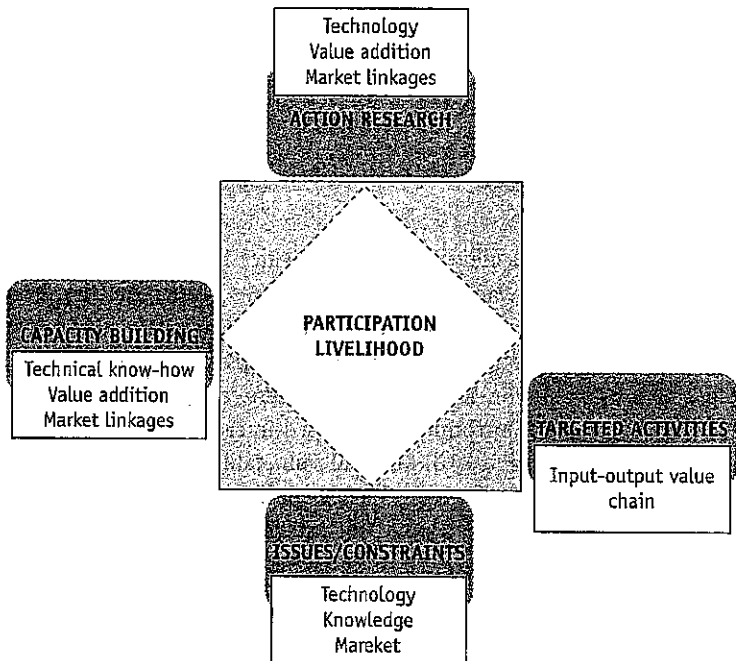
ICRISAT introduced a new approach to watershed management that was followed in these watersheds. It incorporates gender-transformative activities based on a comprehensive, participatory and gender-sensitive analysis of vulnerability. This approach also helps to identify constraints with active participation from all stakeholders, especially women and vulnerable groups, to introduce need-based interventions to meet their desired goals. It recognises differential vulnerability within communities and households. The strategy builds on the existing knowledge and capacities of women members and is implemented with both men and women's participation. It also includes the most vulnerable groups in the community. Therefore, it promotes gender equality as a long-term goal while strengthening economic and social status as well.

Research and development (R&D) interventions at landscape level are conducted at these sites representing the different agro-ecoregions.

The entire process revolves around the four Es (empowerment, equity, efficiency and environment), which are addressed by adopting specific strategies prescribed by the four Cs [consortium, convergence, cooperation and capacity building (Wani et al., 2003)]. The consortium strategy brings together institutions from the scientific, non-government, government and farmers group for knowledge management and sharing. Convergence allows integration and negotiation of ideas among actors resulting in convergence of various programmes. These address the core issue of improving livelihood and protecting the natural resources (Figure 6.2). Co-operation encourages all stakeholders to harness the power of collective action. Capacity building enhances skills, leading to empowerment of communities and their sustainability.

Figure 6.2:

ICRISAT's strategy on women empowerment and livelihood adaptation through integrated watershed management



Source: Author's compilation.

6.3.1 Needs Assessment

Participatory watershed management is a multidisciplinary, multi-institutional approach for natural resource management and providing food security through diversification of livelihood options and increased productivity. Evaluation of a number of watershed programmes indicates the extent of peoples' participation and its importance in the success of development process and the role of institutions for enhanced community participation (Joshi et al., 2004, 2005, 2008). Watersheds with better community participation, including women, landless and vulnerable groups and sound technical inputs enhances the impact. Supporting policies are must for effective watershed development programmes (Joshi et al., 2009; Wani et al., 2008). Recognising the importance of participation, ICRISAT introduced need-based targeted interventions such as village seed banks, vermi-composting, nursery raising, dal making (dal preparation) to benefit women and vulnerable groups. ICRISAT believes in result-oriented action research for development. As a prelude to this objective, issues and constraints were identified for formulation of effective strategies within the community through FGDs, rapid rural appraisals, and formal and informal meetings. Since women make most household decisions, their understanding of the problem, needs and solutions were primary focal points of these discussions. This supports the twin objectives of participation and empowerment and achieves sustainability since they are designed to suit local conditions and skills of the beneficiaries.

6.3.2 Potential Opportunities

Climate change generates resource shortages and unreliable job markets. This has led to increased male migration. Thus, more and more women are left behind with additional agricultural and households duties (Sreedevi and Wani, 2007; Venkateswaran, 1992). Impoverished women's lack of access to and control over natural resources, technologies and credit mean that they have fewer resources to cope with seasonal and episodic weather and natural disasters. Consequently, traditional roles are reinforced. Girls' education suffers, and women's ability to diversify their livelihoods

is diminished (Meinzen-Dick, 2004). Therefore, the new approach to watershed management, which focuses on productivity enhancement and livelihood improvement, provides the scope to identify potential opportunities for vulnerable and women stakeholders as per their needs and skill levels. This strategy helped large number of women beneficiaries to undertake several IGAs/strategies.

6.3.3 Income Alternatives

Building on social capital can make a huge difference in addressing rural poverty in watershed communities. In the watersheds we investigated, emphasis was laid on farm-based interventions such as preparation of vermi-compost, community seed banks and nursery raising as well as agriculture-related allied IGAs for landless and women's group members with the objective of increasing the income (Wani et al., 2003; Sreedevi et al., 2004). By adopting the principle of adding value to the produce to ensure that maximum proportion of market product price goes to the farmers and not to the middlemen, dal-making (dal preparation) proposition was also introduced in the Mentapally watershed of Andhra Pradesh. In this watershed, the SHG members have converted 60 kg of pigeon pea into dal and added ₹5,400 (US\$108) worth value to their produce. Farmers worked at the charges to be paid to the SHG, which are lesser than the commercial mills and have recorded 90 per cent dal recovery. In addition to value addition, farmers have got the nutrient rich pigeon pea hulls to be used as animal feed (ICRISAT, 2004).

6.4 Gender Analysis of the Case Study Watersheds

6.4.1 Collective Action

The results revealed that the Integrated Watershed Management Programme (IWMP) approach adopted was different than the traditional watershed approach. In Adarsha watershed, Kothapally, and Powerguda,

it was an integrated approach with emphasis on productivity enhancement of major crops (maize, pigeon pea and sorghum) and natural resource-related allied income enhancement activities.¹ In Powerguda, collective action was mainly for the service providing function. This was a step higher in the ladder of commercialisation over the Kothapally watershed where collective action was mainly for enhancing the productivity of their lands with a limited opportunity for direct economic gain. The nature and extent of collective action was also directly related with the awareness of the women members (Table 6.2). The women members in Janampet had a high level of awareness about running the highway restaurant. In the case of Powerguda, though the women leader was well aware, group

Table 6.2:
Gender impact analysis of three case studies in Andhra Pradesh, India

S. No.	Description	Powerguda	Janampet	Kothapally
1	Rights			
	Property	Men	Men/women	Men
	Financial resources of the family	Men	Women	Men
	Employment	Men/women	Men/women	Women
	Education	Men	Men	Men
	Social status of women	Medium	Good	Medium
	Awareness among women	Leader fully aware	Very good	Poor
	Agricultural decision-making	Men/women	Men/women	Men/women
	Resistance by men	Nil	Initial	Nil
2	Workload on women	Low	High	Medium
	Wages (Rs/day)			
	Men	50	50	50
	Women	30	30	30
	Load of invisible work	Same	Same	Same
	Workload on men	No	No	Yes
	Time spent on economic work by women	Low	High	Medium

(Table 6.2 Continued)

(Table 6.2 Continued)

S.	No. 'Description	Powerguda	Janampet	Kothapally
	Time spent on social/ community work	-	-	Medium
	Marketing of agriculture produce by women	-	Yes	-
3	Access to assets			
	Access to community assets	Men/women	Men/women	Men/women
	Access to credit	Women	Women	Women
	Access to income	-	Women	-
	Access to information	Yes	Yes	Yes
	Access to service	Nil	Yes	Yes
4	Control on financial resources	Low	High	Low
5	Self-confidence	Slowly building up	High	Low
6	Opportunities for exploration	Minimum	Very high	High
7	Understanding on health	Medium	High	Medium
8	Distressed migration	0	0	0
9	Driver identified	Leader	Mahila Samakhya (federation of women)	Improved water availability

Source: Adapted from Sreedevi et al. (2009).

members were not much aware about the operations as well as the rules and procedures to be adopted. In Janampet, the approach for improving livelihoods was on the commercial scale, and direct economic gain was the main purpose. The women SHGs were federated and the collective action were at a macro-level. This reaped the benefits of common learning, exposure and opportunity to interact with more and diverse group members as well as reduced transaction costs. In Kothapally and Powerguda, the collective action was restricted at small group levels in the village, and exposure for the members was restricted and transaction costs were higher in terms of load on the leadership.

6.4.2 Women Rights and Gender Equity

The impact of the model/approach adopted was distinctively evident in the case study villages (Table 6.2). In terms of rights, it was revealed that Janampet ranked on the top for property rights. Here, women held the property rights along with men. In Kothapally and Powerguda, the property rights were with the men except in the exceptional cases where women headed households due to the death of a male member. The nature and the extent of collective action provided different exposures for the members. In Janampet, the commercial nature of collective activities resulted in women's control of family financial resources. In Kothapally as well as in Powerguda, although women family members earned the money, the control of family financial resources rested with men. In Kothapally, the women group activities provided employment to women members mainly because of the type of activity undertaken. In Powerguda and Janampet, the collective action of women created employment opportunities for women as well as men.

6.4.3 Education and Social Status

In the investigated watersheds, the right to education rested more with men. Efforts to tilt education in favour of women will need a longer time. In Kothapally, the education of boys and girls is similar and no child labour exists in this village. Every school-age child is in school. However, in Powerguda and Janampet, child labour exists. In Powerguda, indigenous women are now aware about educating their daughters. The literacy rate among the population is 45 per cent. Interestingly, female literacy (52 per cent) is higher than male literacy (48 per cent). About 35 children from 3 to 6 years go to *Anganwadi* (preparatory school). Eighteen girl children out of total 31 children were studying in a boarding school some 50 km away from their hamlet. Among children, aged 6–20 years, the literacy percentage is 62 without much gender differentiation. Some of the families are sending their children to English medium schools, paying at least ₹20 per month. There is at least one member from each household

attending school. This shows awareness of the value of education in the village. The social status of women in all of the three study watersheds was better than the normal watershed village.² However, amongst the three watersheds, Janampet women enjoyed higher social status than the women in Kothapally and Powerguda.

6.4.4 Women Workload and Wages

In terms of workload on women, it was higher in Janampet than in Kothapally and Powerguda. Looking at the extent of commercial activities undertaken by the women SHGs, the workload was higher in Janampet. Although Powerguda SHGs undertook a higher scale of commercial activity than the Kothapally SHGs, the workload on Kothapally's women was more than in Powerguda. The Powerguda women employed men for undertaking specific activities and paid higher wages for men as compared to women considering the nature of the work undertaken. Similarly in Janampet, women members compensated their family labour in the field by hiring additional labourers from the market. This financial independence permitted women SHGs to work out alternate arrangements to reduce their workload. However, in all the three watersheds the wage differences between men and women labourers existed, with men being paid higher (₹50 per day) than the women labourers (₹30 per day). Traditionally, men and women undertake specific farm activities and as observed in Powerguda, women felt that the specific jobs done by men need to be paid differently. In Janampet, only women undertook marketing of agricultural produce whereas in Powerguda and Kothapally men took up this activity (Table 6.2).

6.4.5 Women's Empowerment and Decision-making

In all the three watersheds only women SHGs had access to financial credit, as per the current policy of the government. The women members had good access to information. However, new opportunities for exploration were directly in line with the extent of commercial nature of the activities

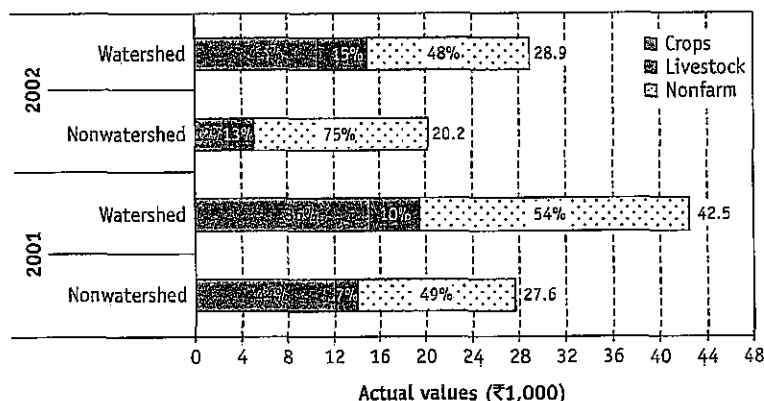
undertaken. In all the three case studies, the new watershed approach encompassing productivity enhancement and livelihoods approach had direct and positive impact on reducing the distressed migration of men and women from the villages. For example, in all the case study villages, before the implementation of watershed activities, men and women alike were migrating to nearby urban places in search of their livelihood especially after the rainy season. However, this situation is reversed with the implementation of need-based interventions that are providing income-earning opportunities in all the seasons. In case of Kothapally, the awareness amongst the members was low, as most of the banking and financial transactions had to be done at a *mandal* (block) level bank situated 15 km away from the village. Men and women took decisions related to agriculture jointly. This is a step in the right direction for sustainable management of natural resources. Men did not resist the progressive measures of women in all these case study watersheds although there was some resistance by the male family members in Janampet initially.

6.5 Results

Reducing rural poverty in watershed communities is evident in the transformation of their economies. In Adarsha watershed, Kothapally, the ICRISAT model ensured improved productivity with the adoption of cost-efficient water harvesting structures as an entry point for improving livelihoods. Crop intensification with high-value crops and diversification of farming systems are leading examples that have allowed households to achieve production of basic staples and surplus for modest incomes. Enhanced participation of the vulnerable groups like women and the landless through capacity building and networking was observed. Kothapally women who were actively involved in the initiative through SHGs, initially focusing on vermi-composting, have now gone on to finance a diverse range of small-scale enterprises ranging from tree nurseries to tailoring. Women SHG members became master trainers to neighbouring villagers on preparation of vermi-compost and travelled to other states as resource persons. The SHGs are common in the watershed villages and provide income and opportunities for empowerment of women. In 2001,

Figure 6.3:

Income stability and resilience effects during drought year (2002) in Adarsha watershed, Kothapally, Andhra Pradesh, India



Source: Wani et al., (2008).

the average village income from agriculture, livestock and non-farming sources was ₹42,500 compared with the neighbouring non-watershed village with ₹27,600 (Figure 6.3). Due to additional groundwater recharge, about 200 ha in rainy season and about 100 ha in post-rainy season were cultivated with different crops and cropping sequences. The productivity of maize increased 2 to 2.5 times under *sole maize* and *four-fold* under maize-pigeon pea intercropping system. The area under maize-pigeon pea and maize-chickpea has increased more than three-fold and two-fold, respectively. Farmers could gain about ₹16,510 and ₹19,460 from these two systems, respectively. The average household net income has increased to ₹15,400 within the watershed area as compared to ₹12,700 outside the watershed area (Wani et al., 2003).

The SHGs with the watershed programmes in Powerguda, Andhra Pradesh, had six-fold higher savings than those without such programmes in Adilabad district. The introduction of improved land management practices such as BBF and bullock-drawn tropicultor (a multi-purpose wheeled tool carrier), along with high-yielding cultivars increased agricultural productivity by 20 times to 350 per cent. Powerguda farmers, particularly many women, learned new techniques in planting, land preparation and intercropping. Many of them grew vegetables for the first time. Over 3 years,

there was a remarkable change in cropping patterns, shifting from cotton to soybean and vegetables (D'Silva et al., 2004). A woman SHG managed an oil extracting machine³ to support IGAs in the community. Seeds of Pongamia, neem and other trees are crushed in this machine to extract oil that is sold in the market. The oil mill has become an important source of income to Powerguda. The women SHG planted about 8,500 Pongamia trees in 2002 and 2003 and 10,000 in 2004 to augment the oilseed supply in future. Since October 2003, Powerguda has discovered a new IGA in tree nurseries. The community decided to invest in a Pongamia nursery ₹30,000 received from the World Bank as part of environmental service payment. For the first time, 147 tons of carbon dioxide was sold from India to the World Bank (D'Silva et al., 2004).

An average family income increased by 77 per cent in 3 years from ₹15,677 in 1999–2000 (before the government invested in watershed development) to ₹27,820 in 2002–2003. Seasonal migration from villages has ended totally, or is negligible. It appears that watershed and agricultural development, complemented by other investments, have provided sufficient employment and income opportunities for the rural people to escape poverty and to stay in the village (D'Silva et al., 2004).

Since 1999, Powerguda has charted a new path of development using watershed management as the growth engine, women SHGs as the institutional anchor, and a total ban on the consumption of alcohol in the village. These steps have enabled Powerguda to march ahead of the other neighbouring hamlets. The people, especially the women leaders, are very proud that they have been able to outperform other villages in social, financial, institutional and environmental development. Powerguda is distinguished from other hamlets due to the strong leadership provided by women through SHGs. Three of the four SHGs are run by women who dominate most of the development activities in the village. Trust, social cohesion, a sound local leadership and democratic functioning of local institutions are among the features of social capital in Powerguda.

Powerguda was unique in that the women SHGs were the dominant institutions in the village. These SHGs had gone farther than thrift. They delivered some of the services, which previously were the responsibility of government agencies. SHGs in the village run a Pongamia nursery with a capacity for 20,000 saplings. SHGs also replaced private contractors in implementing some of the public works. For example, local residents

under the management of SHGs built all the watershed structures in the village. These activities had helped to build the confidence of the SHG leadership while also increasing the coffers of the group. In the watershed contracts, there was an opportunity to save between 18 and 25 per cent of the cost of the structures.

The Janampet watershed village is a step further than the Powerguda and Adarsha watersheds. With the supporting policies from the government, the SHGs at the village, *mandal* (block) and district levels are federated to increase their bargaining power as also financial and political leverage. The women SHG federation provides a forum for women to discuss common issues. The SHG members consider the unity and solidarity among women to be one of the most important benefits of SHG membership. At the *mandal*-level (block) federation meetings, women of different castes and class come together. This solidarity enables them to share their problems and seek help. Also by standing guarantees for SHGs, the federations can help the SHGs to borrow money from financial institutions at lower interest rates. These loans are particularly useful for value-added services such as running a highway restaurant and other micro-enterprises. The federation takes care of bookkeeping and training functions of SHGs. The *Mahila Samakhya* Adarsha Women Welfare Society is a federation of women SHGs and Janampet SHGs are members of the federation. The impact in terms of increasing the family incomes, building the social capital as well as trust amongst the women members from Janampet is superior to the Powerguda or Adarsha watersheds.

6.6 Drivers of Success

The drivers of success varied in all the case study watersheds:

- In Powerguda, the success was directly associated with the strong and capable leadership provided by Ms. Subhadrabai. It may be noted that through training and exposure, Subhadrabai could become a very capable leader though she did not have formal schooling. She was able to channel the energies of fellow women for the sustainable development of the village using natural resources.

- In Kothapally, the main driver of the growth and success increased due to the availability of water resources resulting in increased agricultural productivity and triggered agriculture-related allied activities such as vermi-composting. The women groups in the watershed are collaborating together and progressing to achieve the sustainability through more collective action and exploring new opportunities to increase the income from the collective action.
- In Janampet, it was the collective action and supporting government policy, which enabled the women SHGs to undertake commercial activities successfully with the help of the leadership. Janampet watershed witnessed the highest level of community participation where collective action or collegiate mode of participation is reached. This level of participation in the collective action is quite sustainable and the group can overcome most of the problems through their collective wisdom and opportunities.
- Looking at the process of community participation, the mode of participation starts or is initiated through a co-opting or contractual process and slowly moves towards cooperative, consultative, collaborative and finally reaching to the successful collective action (Sreedevi et al., 2009). It was found that Janampet watershed was on the highest ladder of community participation, whereas Powerguda watershed on the lower ladder.

6.7 Conclusion

The preceding discussion revealed that the integrated watershed management approach promotes gender equality. It is clear that the mere presence of women in watershed committees is not enough for achieving women's welfare. New approaches such as productivity enhancement in community watersheds and integrated IGAs along with specific targeted activities such as availability of water and energy sources are needed to reduce drudgery. These case studies reveal that unless targeted income-generating and employment interventions for women, landless and the vulnerable groups are introduced, the economic resilience of the poor and meaningful participation may not be possible. Therefore, promotion of need-based IGAs such as micro-enterprises and value-addition activities

are essential to achieve socio-economic potential and improve the quality of life. Higher the commercialisation of IGAs, better the women's status and decision-making power in the families and villages. For harnessing gender power, holistic livelihood approach in the community watershed programmes is needed rather than traditional compartmental approach of rainwater harvesting and conservation. To address the issue of gender inclusiveness, watershed programmes should look beyond land development activities. It should take into account the diverse ways in which rural people make their livelihoods from both agrarian and non-agrarian-based IGAs. There is a need to make available the technical know-how and make women aware of such technologies through regular skill upgrading trainings. Enhanced awareness of women's rights through deliberate efforts is critical for sustainable development of watersheds by harnessing the power of women equitably. Considering the basic rule of collective action that under stress, people cooperate better and greed for higher personal benefits affects the collective action, there is a need to harness the gender power through harmony in the watersheds at all the levels, starting from *the family to watershed*.

The lessons learned from the new productivity enhancement and livelihood improvement approach are the guiding force in formulating new common guidelines (Government of India, 2008) for watershed management in the country. Based on the approach developed by ICRISAT and its partners, the government of Andhra Pradesh and Karnataka have adopted a similar approach in bridging the yield gaps and enhancing household income. Further, the Government of India has established 13 model watersheds, by adopting new common guidelines, across nine states in India as sites of learning for which ICRISAT provides technical backstopping. The new common watershed guidelines provide resources and policy support to address equity issues of gender and vulnerable groups. However, without concrete actions such as promotion of need-based IGAs, holistic livelihood approach in the community watershed programmes, regular skill upgrading trainings, etc., by the implementing and coordinating agencies, these provisions would not mean much. There is also a need for creating awareness among all the partners involved in the projects, such as government and non-government implementing agencies, CBOs, SHGs and women groups. This can be enhanced by regular trainings and increasing the number of exposure visits by all agencies involved.

Acknowledgements

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Notes

1. Under productivity enhancement, farmer-based soil and water conservation measures implemented in individual fields were broad-bed and furrow (BBF) landform and contour planting to conserve *in situ* soil and water; use of tractor for planting, fertiliser application and weeding operations; field bunding; and planting *Gliricidia* on field bunds to strengthen bunds, conserve rainwater and supply nitrogen-rich organic matter for *in situ* application to crops (Wani et al., 2003).
2. Normal watershed refers to those implemented by following erstwhile watershed guidelines without focusing either on productivity enhancement or on livelihood activities.
3. Worth ₹375,000 provided by Integrated Tribal Development Agency (ITDA).

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