

Chapter 9

Watershed Development: Rehabilitating Degraded Lands & A Means Of Sustainable Employment

Area Under Degraded Lands

According to the nine-fold land classification, out of 304 million hectares of land in India for which records are available, roughly 40 million hectares are considered totally unfit for vegetation. It is either urban and under other non-agricultural uses such as roads and rivers, or is under permanent snow, rocks and deserts. The break-up of the remaining vegetation-fit 264 million hectares is as follows:-

	Million Hectares
1. Cultivated land	142
2. Forest land	67
3. Fallows/culturable wastes/pastures/ groves	55
4. Total area of culturable lands	264

2. The above land use classification, however, does not say anything about the extent of land degradation or loss in productivity over time caused by various natural and man-made factors. Not only are culturable wastes and pastures considered highly degraded – that is, producing biomass much below their potential – but even a substantial part of cultivated and forest lands has lost productivity due to inappropriate land use and over-exploitation. The National Commission on Agriculture estimated that 175 million hectare. of land was under some form of degradation or the other and was in need of attention. According to the Commission, all rainfed paddy lands in the country were subject to water and wind erosion; thus the 175 million hectare. included 85 million hectares of cultivated land as well. For the rest, there would be 35 m hectare. of degraded and barren forest lands and 55 m hectare of common and revenue lands.

3. One of the most critical aspects of information about non-forest wastelands pertains to ownership. There are three obvious categories: private, community and Government. In addition to uncultivated lands which were historically part of the farmers' holding, especially in ryotwari semi-arid areas, many poor families have been allotted lands under various programmes in the last 20 years and such lands may still be lying uncultivated. Figures from a few states given in the Table show that substantial culturable waste area has been privatised as a conscious policy outcome. Besides there are encroachments, mostly unrecorded.

Past Strategy

4. The two main categories of degraded lands by ownership - private and government – received different treatments in official programmes in the past.

Whereas soil and moisture conservation measures were attempted by the Agriculture Departments on private lands, social forestry plantations were undertaken on government wastes by the Forest Departments of the state governments. These two programmes suffered from two common weaknesses: First, there was no integrated land management -- the two programmes ran in isolation. Second, these were, till very recently, entirely departmental affairs with no participation from the people.

Allotment of Wastelands to the Poor

Name of the State	Area Distributed in 000 Hectares
Andhra Pradesh	1681
Assam	236
Bihar	390
Gujarat	552
Haryana	1
Himachal Pradesh	7
Karnataka	549
Kerala	183
Madhya Pradesh	68
Maharashtra	409
Orissa	290
Tamil Nadu	83
Uttar Pradesh	996
West Bengal	173
Rajasthan	37
Total (including others)	5798

5. The main thrust of the programmes on both private and government lands in the rainfed areas should have been on activities relating to soil conservation, land shaping, pasture development, vegetative bunding and water resources conservation – all on the basis of an entire compact micro-watershed (which would include both cultivated and uncultivated lands) rather than on pieces of wastelands scattered at different places. In the preparation of the watershed development plans, user groups and other people depending directly on the watershed should have been actively involved.

6. In 1994-95, a High Level Committee was set up to review the Drought Prone Area Programme (DPAP) and the Desert Development Programme (DDP) and suggest measures for improving these programmes. The Committee observed that the programmes had made very little impact on the ground, though in operation for over two decades. Consequently, the adverse impact of drought and the process of desertification could not be contained. The Committee recommended a holistic approach to develop these areas through a process of micro watershed planning by

preparing integrated land development plans. The plans would take into consideration the land capability, site condition and local needs of the people. The watershed development plans, it was suggested, should be prepared with the involvement of the people of the area and the plans should include programmes for soil and moisture conservation, water harvesting structures, afforestation/horticulture/pasture development and upgradation of common property resources. A multi-disciplinary team of experts was to give technical assistance to Programme Implementing Agencies (PIAs) which could be a Line Department, a Non Governmental Organisation (NGO), Panchayat or a User Group. A well designed training programme would create awareness among functionaries. The Ministry of Rural Development issued guidelines to put Committee's recommendations into operation. .

7. According to estimates, up to the end of Eighth Plan about 16.5 million hectare rainfed/ degraded land was treated/developed. However, these achievements do not get reflected in Net Sown Area which has almost remained stagnant at around 142 million hectare. This indicates that either the treated lands were already under cultivation or an equal area was getting degraded or diverted for non-agriculture purposes. The possibility of bogus reporting can also not be ruled out. This requires deeper analysis.

The present arrangement

8. Watershed development programmes are implemented by different Departments at the Centre, and in the States. The Department of Agriculture and Cooperation implements the National Watershed Development Projects for Rainfed Areas (NWDPRAs). The watershed approach has been adopted in other schemes like development of catchment areas of River Valley Projects and flood prone areas and control of shifting cultivation in North-Eastern Regions. The Ministry of Rural Development implements DPAP and DDP as also the Integrated Wasteland Development Programme (IWDP). Besides, several externally aided projects are also under implementation. The Ministry of Environment and Forest is implementing an Integrated Afforestation and Eco-development Scheme to promote the development of degraded forests. The Planning Commission also follows a similar approach to implementing special area development programmes like Western Ghats Development Programme (WGDP) and Hill Area Development. In addition to the above Centrally Sponsored Schemes several State Governments are also implementing schemes for soil and moisture conservation on watershed lines. Maharashtra, Karnataka, Andhra Pradesh and Madhya Pradesh have made great strides in this regard. Orissa and Rajasthan have also taken the initiative.

9. From the above, it is clear that the watershed approach has been accepted as a means to increase agricultural production while arresting ecological degradation in rainfed and resource poor areas. It would, at the same time, improve the level of living of the poor by providing more sustainable employment. Yet, the implementation of this programme by different departments/agencies has been based on different approaches. This has resulted in problems at the field level. The need for 'a Single National Initiative' has been felt for some time, and was also articulated in the 1999-2000 budget speech of the Union Finance Minister.

10. Under NWDPRAs, the main objectives are (i) to conserve upgrade and utilise land and water resources in an integrated manner, (ii) to generate massive sustained employment after completion of the project, and (iii) to restore ecological balance.

This project also involves peoples' participation. However, the norms and the guidelines for implementation of the programme under NWDPRRA were quite different from those followed by the Ministry of Rural Development. More recently an attempt has been made to evolve a common approach to watershed development by introducing significant changes in NWDPRRA. A participatory approach for empowerment of the community lies at the center of the new strategy.

11. From 1999-2000 a Watershed Development Fund (WDF) has been created and National Bank for Agriculture and Rural Development (NABARD) has been entrusted with the responsibility of covering 100 districts within 3 years under this programme. Initially 50 districts in 6 States, namely, Andhra Pradesh, Maharashtra, Gujarat, Madhya Pradesh, Orissa and Uttar Pradesh will be covered. NABARD would give funds in the shape of loans to States to help sustainable models of watersheds for replication. It would begin with the replication of the Maharashtra Indo-German watershed model on a pilot basis. One-third of the watershed development fund would be utilised for promotion, awareness and capacity-building of the watershed community. Credit support would be given to develop self-help groups. NABARD would adopt the common guidelines already framed by Department of Agriculture in order to ensure a certain degree of uniformity in the implementation of watershed projects.

12. Critical in the development of watersheds is the import of appropriate technologies. Given socio-economic and agro-ecological variations in different regions, area-specific appropriate technologies become all the more a vital need. Various research organisations under the aegis of Indian Council for Agricultural Research (ICAR), Krishi Vigyan Kendras, State Agricultural Universities, NGOs and other professionals would need to be drawn into the development of new technologies to increase agricultural output in rainfed areas. Development of infrastructure such as irrigation, roads, markets, electricity, etc. is also an important pre-requisite for sustainable agricultural growth in regions which hitherto lag behind.

13. Since the adoption of common guidelines in 1995-96 based on Hanumantha Rao Committee's recommendation the physical achievement under area development programmes is as under:

	No. of Projects	Area in Lakh Hectares
IWDP	247	15.98
DPAP	6515	30.00
DDP	2202	11.00

Impact & Findings From Evaluation Studies

14. Although the Ministries of Agriculture and Rural Development have implemented watershed projects for more than a decade, evaluation reports have shown that the projects cannot succeed without full participation of beneficiaries and attention to issues of social organisation. This is because success depends on consensus among a large number of users. Also, collective capability is required for management of common and new structures created during the project. Then, costs and benefits of watershed interventions are location-specific and unevenly distributed among the people affected. Most projects have failed to generate sustainability because of the

failure of government agencies to involve the people. On the whole, villages with projects operated by non-government agencies or in collaboration between NGOs and government agencies performed significantly better (see boxes) than those that have purely government projects. Most government watershed development investments have yielded disappointing results given the vast resources allocated to date.

15. DPAP was recently studied by the Comptroller and Auditor General (CAG). Their findings are summarized in the box.

CAG Report on DPAP, 1999

- Rs 2,195 crores spent on DPAP alone
- Drought prone area increased from 55.3 m ha in 1973 to 74.6 m ha in 1995
- Insufficient evaluation of the quality of works, even run-offs not measured
- Survival rate of plantations very low
- Core sector activities very poor in Bihar, Karnataka, Maharashtra, MP and Rajasthan

16. A major study was done for ICAR in 1998 (reported in Farrington-edited Participatory Watershed Development, OUP, 1999) in 70 villages of Maharashtra and Andhra Pradesh, covering several watershed programmes. The survey revealed that the increase in agricultural production lasted no more than two years. Structures were abandoned because of lack of maintenance and there was no mechanism for looking after common lands. Farmers were not convinced about the need to contribute; that would happen only when they make the decisions about what kind of measures are introduced on their plots. Often, in government projects, farmers do not have this choice and technological norms are too inflexible. The very fact that farmers are unwilling to contribute towards the cost of works shows that they have little faith in the effectiveness of the programme.

17. The study also compared achievements by several watershed programmes, such as NWDPR (Ministry of Agriculture), AGY (Adarsh Gram Yojana – implemented through NGOs), IGWDP (an Indo-German project run by Maharashtra government in collaboration with NGOs) and DPAP (Ministry of RD). Except the villages where NGOs were active, all other programmes scored poorly.

18. Although guidelines of both the Ministries of Rural Development and Agriculture emphasize decentralization and participation, implementation of watershed projects has remained poor because of the following factors:-

- Little participation of local people. Field staff have no incentive to pursue participatory approaches;
- Insecurity about availability of funding at the grassroot level; there is no guarantee that funds would be released in time by the Government of India (GOI) or other funding agencies. Pressure to spend substantial resources by a fixed deadline;
- Limited time permitted for preparatory and group formation activities. Strict orientation to achieve physical targets leaves field staff little time to promote social organisation;

- Unclear criteria for selecting areas and villages or for withdrawing from a village;
- Limited human resource capabilities. Government staff have sometimes subcontracted all work related to participatory processes to NGOs without developing any internal capacity;
- There is no involvement of senior State Government officials and line agencies. Watershed development programmes require a comprehensive and integrated approach involving several line departments.
- In the present form, schemes are left to be planned and executed by district level officers with limited capability to do planning and write a good project. The quality of project preparation and of implementation suffers a great deal. Moreover, the quality of project preparation and implementation suffers once it is realised that senior officers from the division and State capital take no interest in such schemes and their interest is limited to monitoring of financial expenditure alone.
- There is little impact assessment or evaluation of physical progress after the scheme runs for a couple of years. It is taken for granted that once money has been spent, physical progress automatically results. It is quite likely that soil conservation structures may not last for more than a few years, or plantation may not survive.
- Horizontal linkages are very weak between various line agencies at the district level. Thus, although watershed development may require integration of soil conservation techniques with plantation, there is little likelihood of effective coordination between the District Soil Conservation Officer and the District Forest Officer. The Indian Administration tends to look up to the seniors rather than establish linkages with peers in other departments.
- There is no arrangement for handing over structures and maintenance of plantation after a project is completed. That impairs sustainability of projects.
- Watershed Development programmes are being implemented by several Departments of Government of India -- often with different guidelines. This causes confusion and gives an impression to the States that there is no coordination between Central departments. Even where the approach and guidelines are common, the sanction of funds is done by different departments and each does separate monitoring.

19. For watershed projects to be sustainable, community managed systems are needed and they can succeed only with farmers' contribution and their commitment in terms of time and resources. Equitable distribution of water amongst the families has been a major factor in the success of Sukho Majari (Haryana) and Relegaon Sidhi (Maharashtra) Projects.

20. Common guidelines prescribe that those who benefit from works on private land should contribute 10% of the total cost and 5% for works on common lands but in practice it has been difficult to collect these charges in full or the recovery is shown on paper but adjusted by the contractor in his bill. For sustainability, it is important that the farmers' contribution remains a necessary commitment before the start of a project; that would ensure a sense of ownership, lead to better quality and transparency and assured money for maintenance. It may be pointed out here that Myrada, an NGO working in Southern India, insists that all works on private lands should be fully financed by the individuals concerned.

21. Thus, with a few exceptions, efforts by government and international agencies to introduce watershed rehabilitation on a large scale have left little lasting impact on the ground.

Characteristics of Successful Projects

22. Successful programmes that have adopted participatory approaches share the following characteristics:

- They devote significant resources to social issues;
- A high proportion of staff members have experience and skills in social mobilization;
- Project leaders are fully committed to participation and, in most cases, donors or senior officials apply pressure to adhere to participatory approaches;
- Project monitoring explicitly checks whether local organizations of users have been formed;
- Staff members have an incentive to undertake participation; and
- Communities being organised have capacity to influence how the field staff work.

23. Wherever such priorities have been kept in mind, success stories of micro watersheds abound (see boxes at the end of the chapter).

24. In addition, States like Madhya Pradesh and Andhra Pradesh have taken to a 'mission mode' to go about watershed development. For instance, the Rajiv Gandhi Watershed Management Mission initiated in Madhya Pradesh in 1994 identified degraded lands in geographical units of 5000 to 10000 hectares. Called milli watersheds, they are further divided into micro watersheds of 500-1000 hectares where people are organised into User Groups for the land owning class, Self-Help Groups of the landless and Thrift and Credit Groups for women. Between 1994-98, against a target of 12 lakh hectare, the Mission covered 34 lakh hectare; completed soil and moisture conservation works in 12 lakh hectare; and formed 5000 watershed committees, 30344 user groups and self-help groups and 5304 women thrift and credit groups. As a result of all these efforts,, the ground water has been recharged in these areas and water levels have increased considerably. There has been an improvement in agricultural productivity and in the coverage of land by bio-mass.

25. In Andhra Pradesh, the early nineties saw successful watershed development in select districts . Then, in 1997-98, the Government launched a 10-year perspective plan for development of 100 lakh hectares of wastelands. The technical input for this comes from Andhra Pradesh Remote Sensing Application Centre, which will also monitor the progress on half-yearly basis in terms of changes in ground water levels, afforestation, biomass coverage etc. A massive programme of training and capacity building has been initiated. An essential pre-requisite to select an area is community mobilization.

Other policy issues

26. It should be stressed here that watershed development programmes do not directly address poverty or unemployment. It aims at increasing or stabilising the carrying capacity of land and water resources in rainfed areas. As poverty is both a

cause and effect of over-exploitation of natural resources, successful watershed development would result in sustainable reduction in poverty. On the other hand if production is not emphasised as the goal, one may end up achieving neither reduction in poverty nor employment.

27. The quality of implementation is often poor due to lack of trained staff at field level and the apathy of bureaucrats in charge of planning and executing the project. There is lack of inter-departmental coordination and inadequate preparatory work. Furthermore, the interface of watershed associations/committees with Panchayati Raj Institutions, particularly the Gram Panchayats, is tenuous. Of course, members of the watershed association are also members of the Gram Sabha but they would have to be made accountable to both the Gram Sabha and the Gram Panchayat. Lastly, given that development of agriculture on a watershed basis would be biased in favour of those who own land, it is important to ensure that the landless do not suffer in contrast. Access to land through *Pattas* on common property resources, usufructuary rights on forest produce and non-farm employment would have to be ensured on equity considerations.

28. A new Department of Land Resources was created in April 1999 by merging schemes of area development (like DPAP, DDP and watershed development/soil conservation/social forestry as part of EAS) with the present Department of Wastelands Development. Ideally, the new Department should follow a mission approach and should be free to allocate funds to states on the basis of performance and effective utilisation. Its future strategy should be capacity-building of grassroot organisations in planning, monitoring, implementation and marketing. Other features of the new approach:

- 25% contribution by state governments.
- Decentralise the power to sanction projects and give it to state governments.
- Prepare projects for adjoining districts professionally.
- Constant monitoring, evaluation, impact assessment by external experts. NABARD, MANAGE, NIRD, etc to be involved in this exercise.
- Funds in the first stage should be given for states which set up organisational structures to appraise such projects properly.
- High priority to rejuvenation of village ponds and tanks and recharge of groundwater.
- Integration of all area development with felt needs of the people, such as drinking water, credit, etc.
- Training of district level officers to be an integral part of such projects and implementation should begin only when such training is complete. This will also require preparation of appropriate training modules; selection of training institutions and training of trainers.
- There should be an advisory body for each state/project consisting of experts, NGOs and people's representatives who should meet regularly to advise on policy and implementation issues.
- Panchayats should be involved and the involvement should include transfer of funds to village level bodies including user groups to handle those funds; the job of

Government agencies should be to facilitate and train rather than control funds. Where panchayats represent several villages, single- village organizations -- as a sub-units of panchayats -- should be created so that land in question is appurtenant just to one village to avoid conflict.

- The ownership and control over revenue wastelands should be transferred to Panchyati Raj Institutions (PRIs) and village organisations to ensure certainty of tenure. In ex-ryotwari states, transfer of revenue lands to panchayats has still not been done, which makes it problematic for the village panchayats to ‘own up’ efforts on such lands.

- Since cultivable wastelands in many States have already been settled with the poor, special projects should be undertaken to make such lands productive. Private ownership will help in sustained increase in land productivity.

29. In short, the objective of all land based intervention should be, “To enable rural people in rainfed regions to prevent, arrest and reverse degradation of life support systems, particularly land and water, so as to produce biomass in a sustainable and equitable manner’. It is important to look at forest lands, non-forest wastelands and crop lands in an integrated manner. This is often not done as treatment upstream to reduce soil movement does not benefit large farmers who are downstream. They see no advantage and are indifferent or opposed to this strategy. They would prefer to conserve and harvest water in the drainage line so that it can be used directly for irrigation or to replenish groundwater. However, lands in the upper catchment should be rehabilitated first for at least three reasons: First, the landless and the poor who depend on upper slopes can benefit; second, groundwater recharge begins at the earliest; and third, by the time the lower catchment is treated any debris and erosion running down from the upper catchment will have been minimized.

30. However, upper slopes typically are under the control of Forest Department (FD) and it does not permit other departments to operate on its lands. The Ministry of Rural Development recently permitted its funds to be used in watershed schemes by FD, but a similar initiative is needed from the Ministry of Agriculture too. Between forests and agriculture, the complementarity needs to be strengthened; that way, the local community will get to develop a stake in the preservation of forests, which in turn can deter individual attempts at encroachments or degradation. For now, then, three life support systems -- land, water and forests -- remain unintegrated administratively and management-wise. Therefore, the government would strive to do integrated planning at the village level through peoples’ participation. Linking the future of forests and uncultivated lands with crop lands and groundwater recharge alone will ensure sustainability of the government efforts.

Examples of Success

Box-1 Watershed Development in Ralegaon Siddhi

Ralegaon Siddhi Project, covering four watersheds in geographical area of about 892 hectares in Maharashtra, is one of the success stories. In a total project outlay of Rs.112.75 lakh, the State Government contributed Rs.52.75 lakh, Rs.47 lakh was borrowed from banks, Rs.11 lakh was put together by villagers through shramdan and the remaining Rs.2 lakh was raised from other sources. Result of the initiative: a series of checkdams, cemented bandharas, and nullah bunds have been built at strategic locations. All these increased the infiltration of harvested water and recharged ground water. Today Ralegaon Siddhi has two percolation tanks, thirty nullah bunds, eighty-five wells, and eight borewells all of which are viable right through the year. Farmers now grow two or three crops every year including fruits and vegetables. All the soil and water conservation structures were built through community action. The villagers have stopped grazing their animals on common lands; instead, they have switched to other ways. To take care of equitable distribution of water, they have formed associations pani puravatha mandals. The success story owes much to leadership of Sri Anna Hazare who turned a once poverty stricken Ralegaon Siddhi into a self-sufficient village. It is the people's participation that gave it all element of sustainability.

Box-2 Johad – Watershed in Alwar District of Rajasthan

- Responding to an impending water crisis, people at Alwar acted jointly to revive a traditional technology to restore the ecological balance of the region. It was simple enough: they used 'Johad,' a form of tank in which the locals stored water for lean seasons in years gone by.
- Tarun Bharat Sangh (TBS), a voluntary organisation, brought the village community together to build 2500 Johads in 500 villages in 8 blocks of Alwar district.
- The Gram Sabha (i.e. village community) was responsible for selection of site, construction and maintenance of Johads and also controls the use of water from it.
- Villagers contributed 70-90 per cent of the cost in cash, kind and labour. TBS mainly paid for hiring skilled labour (masons) and to buy cement, iron, diesel etc. Their involvement has given the villagers a sense of ownership and ensures maintenance of structures.
- Johad is constructed in a place that receives maximum run-off for harvesting. The size of Johad is based on an anticipated quantity of run-off. Its shape is dictated by the flow of water and its pressure.
- The Johad initiative has fulfilled a need for water to drink and for irrigation purposes, and restored ecological stability by increased recharge of ground water. It has increased food production, helped in soil conservation, increased the level of water in wells, increased biomass productivity and even converted two seasonal streams Arvari and Ruparel into perennial rivers.
- For women in the village, no longer do they have to go through the drudgery of long, long walk, pots on their head, to fetch scarce water.

Box-3 Integrated Micro Watershed Development Programme of N.M. Sadguru Water and Development Foundation in Gujarat Village

- Thunthi Kankasiya is a tiny village of Gujarat, its inhabitants all tribals. Being remote, the sleepy village had hardly had any development activity about it for long.
- That was until 1991. Then, groups of villagers approached 'Sadguru' with their problem: how to undertake land and water related activities in the village. Their first and foremost demand was to bring River Machhan water to their village to meet the need for drinking water and irrigation.
- Thus began a major watershed initiative which involved conserving soil and water. In the last six years, as their efforts grew in intensity, the experiment left a considerable impact on the socio-economic milieu of the village.
- ❖ In 1998, almost the entire village population was brought above the poverty line with average household income a tidy Rs.35, 620 per year vis-a-vis Rs.9,000 in 1991.
- ❖ Agriculture production is up to 4000 Kg per hectare per year as against 900 Kg per hectare in 1991.
- ❖ A high migration rate of 78 per cent to 80 per cent has become a trickle of 5 per cent; and its duration – once up to nine months – is just a two- month period.
- ❖ In 1998-99, there were 2,00,000 trees and more in a village which barely had 50-odd trees when the experiment was launched.
- ❖ Drinking water shortage is a thing of the past, what with 21 perennial wells where water is available at 30 feet against more than 100 feet earlier. There is a constant recharging due to watershed intervention.
- ❖ The village has electricity, roads, health sub-centre and a three room school building.
- Thunthi is not the only one of its kind. There are more than 300 such tribal villages across the borders of Gujarat, Rajasthan and Madhya Pradesh falling under Mahi basin and Mahi macro watershed. They all have witnessed similar transformation under the Sadguru integrated micro-watershed development approach.
- This transformation has been brought about with full involvement and participation of the local people in the form of Watershed Associations, User Groups, Self-Help Groups, Irrigation Management Committees and the like.

Box-4 Jhabua, Madhya Pradesh Shows the Way:

➤ Jhabua has shown how a State bureaucracy has taken the initiative to empower the local population to manage its environment through people-driven watershed development. The various Departments worked in unison and people's involvement in the programme was total in the shape of participatory appraisal, formation of user groups and self-help groups.

➤ Here are some highlights of an evaluation of selected watersheds which were in functional between 1994 and 1998:

❖ Just under 250 micro watersheds were built; they came up in 374 villages; among them they covered 22 per cent of the district land area by April 1998.

❖ Irrigated area doubled in 4 years because of increased water availability.

❖ Agricultural productivity, cropped area and cropping intensity of cultivated area all have increased.

❖ Food availability has increased and 313 village level Grain Banks have been established providing food security for the local population.

❖ A 66 per cent reduction in wasteland area has been achieved in 11 micro watersheds, thanks to watershed management and planting of various beneficial species such as bamboo, anwla, acia catchu and neem.

❖ Perhaps the biggest benefit of them all is the rapid regeneration of grass, which has increased the fodder availability. Earning money from selling grass is one gain; alongside, villagers have started keeping better breed of cows and buffaloes. Increased water availability has stepped up vegetable production as well.

❖ Dependence on money lenders has gone down. Distress migration has reduced considerably.

➤ In Jhabua, total expenditure till mid 1998 was Rs.16.48 crore, of this Rs.11.95 crore has gone into direct investment in watershed development works. Enthused villagers now save a part of their wages to raise a Watershed Development Fund (WDF) and a Gram Kosh (Village fund); they intend to use these funds for collective activities and *baira ni Kuldi* (Women's thrift and credit groups). This has improved the financial security of the villagers, both collective and individual.

Box 5 All- Woman Watershed Committee in MP Village

- Gauraiya is a multi-caste village 25 Kms from Sagar District in Madhya Pradesh. This area was characterised by barren land and a feudal set-up. Traditionally, the task of fetching drinking water from far flung places fell on women.
- The turning point came in 1977 when an all-woman Watershed Management Committee was formed, headed by Sita Bai. This initiative under Rajiv Gandhi Watershed Management Mission has paid unexpected and rich dividends.
 - ❖ The village now gets assured water supply through pipes throughout the year.
 - ❖ Area under cultivation has almost doubled and the average farm produce trebled in three years.
 - ❖ Women's Self Help Groups protect 5.5 lakh trees planted on community and Government land. Social fencing by women volunteers has also ensured the survival of 90% of those trees.
 - ❖ The improvement in soil quality and underground water levels has also led to regeneration of nearly three lakh teak and two lakh bamboo trees planted four years ago.
 - ❖ Gauraiya women have also organised seven *mahila bachat samoohs* (women's self help groups) with impressive bank savings ranging from Rs.15,000 to Rs.25,000.
 - ❖ Jagriti, a self help group of harijan women, plans to go in for cattle rearing, while some other groups have taken up a Government contract to supply porridge and dal to 150 aganwadis in adjoining villages under mid-day meal scheme.
- In Gauraiya women lead and men follow. It is the change in the gender relations brought about by the empowerment of women that makes the story of Gauraiya stand apart.