

Impact of Water based Interventions of Rajiv Gandhi Watershed Mission on Tribal Livelihood: Case Study of Dhar District in Madhya Pradesh

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1. RAJIV GANDHI WATERSHED MISSION

Unpredictable variations in agricultural productivity in rain fed areas coupled with increased exploitation of the natural resources had led to an increasingly fragile ecosystem. In early 90's problems of resource degradation, declining land productivity, prevailing draught conditions and the mixed experience of '*sarkari*' departmental approach necessitated a move towards community involvement in natural resource management. As a result Central Government issued resolutions like Joint Forest Management and Guidelines for Watershed Development emphasizing the need for greater community involvement in planning and management of interventions, reorientation of line department roles and issues of efficiency, sustainability and equity. Keeping in pace with the nation wide trend and its own policy of decentralization, Madhya Pradesh government started Rajiv Gandhi Watershed Mission program.

Rajiv Gandhi Watershed Mission started on 20th august 1994. The main aim of RGWM was to integrate concerns of poverty reduction and environmental regeneration through participatory watershed management. The program was started with following objectives:

- To augment, conserve and optimize the utilization of soil and water resources (ground and surface) in rain fed areas to reduce the vulnerability to droughts and stabilize the fluctuations in agricultural production.
- To develop an easily available repository of scientific and technological inputs especially for the field level implementing agencies which could facilitate detailed and area specific planning.
- To maximize people's participation in concept, planning, implementation and maintenance of soil and water conservation activities in Watershed area so that the entire corpus of scheme becomes effective as well as transparent in working.
- To focus on disadvantaged communities through equitable distribution of resources and sharing of benefits.

Its strategy was to improve economic conditions of villagers by enhancing their employment opportunities by providing employment in initial stage by construction of water harvesting structures and various soil and water conservation activities and later on intensifying agriculture by providing a source of irrigation. The idea was to involve people in conservation of land and water resource and thereby educating them to create a self generating system of land and water conservation. This program has innovated the approach of watershed management through community participation by involving water user groups, women's SHGs, thrift and saving groups in the creation and management of watersheds.

1.1 Institutional Arrangement of RGWM

The organizational structure of RGWM consists of villagers, NGOs, Govt. employees from different departments and panchayat members. The members from User group, SHGs and Women Thrift and Credits Group from the area under micro watershed together constitute Microwatershed committee (at village level) and form the basic unit and first layer of whole institution. The microwatershed committees must have at least three members from Gram

Panchayat, at least three members should be women and one member should be a member of PIA. The secretary is employed on contract by the committee and is responsible for operations of funds, maintenance of books of accounts and issuance of orders on behalf of the committee as per the procedure laid down by District Rural Development Authority. This committee works democratically and takes all the activities pertaining to planning of watershed activities, execution, monitoring, and disbursement of funds and maintenance of assets created.

The second layer of organization is the Project Implementation Agency, a multidisciplinary team having members drawn from different govt. departments and NGOs, either as a group or as separate entity, responsible to DRDA. This PIA functions under the leadership of a Project Officer and look after the working of milli-watersheds, which can be a parcel of five to ten thousand hectares of land under different micro-watersheds. PIAs prepare micro-watershed action plans addressing local problems through assistance of villagers and using P.R.A. techniques. At the same time entry point work is taken up to organize the villagers around the watershed program and to build a strong link between the villagers and the P.I.A. These entry point activities can be construction of road, or a community meeting place, or repair of any common property. Community is organized into U.G.s, SHG.s and women's thrifty groups. Thus, the first year activities involve institutional arrangement, training, community organization, action plan preparation and sanction, supervision and providing technical guidance.

The third layer consists of Watershed Advisory Committee under the chairmanship of the President of the District Panchayat with DRDA as its nodal agency. DWAC is primarily responsible for watershed selection and oversight of program progress. Further, there is a Watershed Technical Committee at the district level under the leadership of the District Collector who is designated as Mission Leader for the district. The District Watershed Technical Committee (DWTC) offers technical assistance to the planning and implementation process and includes district level officers of various Government departments as well as NGOs.

One of the features of institutional aspect of RGWM is its source of funding. The mission is drawing funds from three schemes which are Draught Prone Area Program, Employment Assurance Scheme and Integrated Wasteland Development Program. All the three schemes aimed at development of natural resources and maintain environmental balance, but they followed different guidelines regarding technical, administrative, financial and institutional aspects. As a result these schemes were failing to create desired holistic development and community participation. As per the recommendations of technical committee headed by Prof. Hanumantrao, suitable technical and financial guidelines of all the three schemes were included to create guidelines for Integrated Watershed Development Program. Entire amount of DPAP and IWDP and fifty percent of EAS are being allotted for RGWM funding. Funds from any of the given schemes are allotted to any watershed program as per the expenditure per hectare criterion of the guidelines issued by central govt. The funds thus obtained are spent on activities relating to treatment and development of watershed area (80%), community organisation (5%), administrative expenses (10%) and training (5%).

Today RGWM is working in about 7600 villages out of 51086 villages in the state, covering nearly 35 lakh hectares of land, where work is already completed in 14.26 lakh hectares of land. The result is the there is about 59% increase in land under irrigation and increase in productivity of 30% in Rabi crops and 37% in Kharif crops. With the second track being

developed of Pani Roko Abhiyan, the Mission is planning to extend its presence into all the villages of the state fulfilling the original vision of becoming a people's movement for water conservation.

2. OBJECTIVES

The basic premise of undertaking this case study is to understand and analyze various factors affecting agriculture in tribal area, and understanding the impact of interventions made by RGWM on adoption of irrigated farming and their response to the interventions. Finally the main objective is to gauge the factors influencing success or failure in promoting tribal livelihoods based on intensification of agriculture using water. For this purpose two microwatershed in Dhar district were chosen. In Dhar district tribal population is dominant and is basically an agriculture based economy. The case study is particularly relevant here as after interventions of RGWM there is marked increase in income from agricultural production. Tribal farmers are growing two crops per season and are investing heavily on irrigation equipments. It has reduced migration level and one can also observe decline in soil degradation. RGWM started its watershed activities in the district in the year 1995. Today about 20 milliwatersheds covering 1,70,458 hectares of land is under watershed activities extending over 306 villages. Along with governmental PIAs, there are three NGOs acting as project implementation agencies. The microwatersheds chosen are Hemaburdi and Padliya-Seetapat microwatersheds. Hemaburdi is situated in Naalcha block and Padliya-Seetapat is located in Tirla block of Sardarpur tehsil.

3. DHAR

Dhar district is situated in western part of Madhya Pradesh, at 22⁰01' to 22⁰14'N latitude and 74⁰28' to 75⁰42'E longitude. The district is bounded on the North by Ratlam and Ujjain districts, on the east by Indore, on the south by Khargone and on the west by Jhabua district. The district is divided into 7 tehsils viz. Dharampuri, Gandwani, Kukshi, Sardarpur, Badnawar, Manawar and Dhar which are further divided into 13 blocks or Janpad panchayat. Total number of villages in the district is 1557. Dhar district has population of 13, 67,412, the percentage of scheduled tribe being 54%. Main tribes in this district are Bhil, Bhilala, Barela and Patelia.

The district extends over three physiographic divisions. They are the Malwa plateau in the north, the Vindhya range in central zone and the Narmada valley along the southern boundary.

Malwa plateau covers the northern parts of Dhar, Sardarpur and Badnawar tehsils, an area of about 500-700 meters. The valleys are covered with black cotton soil of varying thickness, mostly adapted for cultivation. Southwards the terrain is rugged and falls abruptly to the level of Narmada valley almost 250 meters above mean sea level. The great Vindhya range extends from west to east and scarp at most of its length towards the south. A part of the Vindhya range extends in the district in a crescent belt generally from south-east to north-west. It restarts along the Narmada in the south-west. The range slopes towards the north and gradually meets the Malwa plateau, forming the boundary between Sardarpur tehsil and Jhabua district. The Vindhya ranges form the watershed in the district from where many smaller rivers flow north and south to join Chambal and Narmada rivers. Below the Vindhya scarp lies the narrow valley of the Narmada. It occupies the southern part of the district in Manawar tehsil and the south-eastern part of Kukshi tehsil. The width of the valley

is 15 to 30 kilometers. To the east the valley is undulation wider, more open and fertile with alluvial cover.

Narmada, Chambal and Mahi constitute the river system of the district. Narmada arising in Amarkantak hills forms the southern border of the district. The main tributaries of Narmada flowing in the district are Uri, Wagh and Man. Chambal rises in Indore district at Janapae spur of Vindhyan and taking a western course passes through the north eastern part of the district. There are no irrigation works on this river. Baveri and Chambal are its main contributory. Mahi is a small river in Sardarpur tehsil.

According to 1991 census, population of Dhar district is 1367412, decadal growth being 2.93 %. Density of population is 168 per square km and literacy rate is 34.54%. Dhar is tribal dominated district, tribal population being 731272, which is 53.48% of total population. The total number of working population is 638933 which is 46.73% of total population, in which 59.2% are farmers, 24.1 % are agricultural laborers and 1.1 % of population is involved in family businesses and construction work.

Out of the total geographical area of 819541 ha of Dhar district, the forests cover is about 119724 ha comprising about 15 % of total land area of district. About 115675 ha of land is non agricultural land and 19243 ha of land is under cultivation. 53149 ha of land is used for purpose other than agriculture and 6475 ha is wasteland. Total cropped area is 731587 ha. Forest here is classified as Southern Tropical Dry Deciduous forests. The main characteristic of forests in Dhar district is that they are composed of a large number of moist species. It is usually predominated by the teak (*Tactonagrandis*) followed by salai and anjan.

Dhar district has been classified as transitional ecosystem of moist semi-arid and dry sub-humid climate. It receives an average rainfall of 833.1 mm. The mean annual rainfall covers 60% of total Potential Evapotranspiration demand. The south west monsoonal rainfall which is key to success of rain fed farming of the district covers 90% of total rainfall. The district receives surplus rainfall during August and September while remaining period the soil moisture control section remains partly dry requiring irrigation for achieving potential production. The region experiences hot summer and mild winter, mean annual temperature varying from 18 to 22°C.

In Dhar district, geology is complex and comprises mainly granite and their alluvium (73 % of TGA), followed by basaltic Malwa plateau (covering 24%). The soils developed from granite and their alluviums have high productivity potential as compared to soils of basaltic formation.

The important crops of the District are jowar, maize, bajara, rice, kodon (also known as bhadli), tuar, mung and urad, tilli or sesamum and remeli, cotton and tobacco, all grown in Kharif, while wheat, gram, barley, lentil, tiwada and linseed and mustard are all Rabi crops. Soyabean and cotton are main cash crops of this region. Soyabean can withstand high temperature and short period of draught and can be grown on all types of soil. In case of cotton also, the climatic conditions are favorable in this region. Maize is main food crop and used mainly for consumption along with jowar and pulses like moong and urad. Maize is grown during monsoon season in the months of July, August and September when the region receives surplus rainfall. The total area under Kharif crop in the year 2003 was 473200 ha, out of which maize was grown in 84000 ha, soyabean in 225800 ha and cotton in 94600 ha.

In Rabi season, wheat is the most important cereal crop grown in this region. In the year 2003-04 out of 207000 ha of total land under Rabi about 147900 is under wheat cultivation.

In Dhar district, poor soil quality and unavailability of a permanent source of irrigation are major factors hindering agricultural growth. According to Soil Resource Atlas- Dhar, about 70% of the district is under moderate erosion and severe to very severe erosion (30 %) area and more than 50% of the area of the district soil has low to medium organic carbon status. About 50% area of the district has very low to low Available Water Holding Capacity. Poor soil quality and absence of suitable technology for irrigation together used to force local tribal to migrate to other areas in search of livelihood.

4. HEMABURDI WATERSHED

Hemaburdi village is situated in Nalcha block of Dhar district. In Nalcha block tribal population is about 14 % of total population. Hemaburdi is a small tribal village with an area of 138.13 hectares, inhabited by Bhil tribe. As per 1991 census, total number of households is 20 and population is 161. Sex ratio is 894 while literacy rate is 22 %. The village is situated in a region having undulating physiography with two deep gorges, denudated hills forming the ridgeline in south and small nallas. The rainfall in this area is 1050 mm, which is one of the highest rainfall receiving regions of Dhar district. In spite of good rains, low agricultural productivity has been one common feature of this region. Continuous deforestation in a span of thirty years has led to problems like soil erosion, loss of soil fertility and problem of water scarcity, which becomes critical during summers, when even drinking water is not available. There is no permanent source of irrigation, to ensure water availability for whole year. As per the 1991 Census, out of the 138.13 hectares of village area, about 65.84 hectares was cultivated which was 48% of total village area and was totally dependant on rain as a source of irrigation. Kharif crops like Maize and Soyabean were the only crops grown by the villagers. After taking Kharif crop, all the 20 households used to migrate to Malwa and Nimar region to work as agricultural laborers. There they were engaged either on an annual contract or as a daily wager.

4.1 RGWM Interventions in Hemaburdi

4.1.1 Hardware of System

RGWM started interventions in the village in the year 1996 covering an area of 681 hectares. Here the project implementation agency was a local NGO named Institute for Resource Conservation or IRCON. The PIA started its activities by conducting PRA in which community participation was sought for selection of sites for construction of gabien structures, RMS structures and sites for plantation of trees and pastures. It took PIA about eight months to establish rapport with villagers and seeking their participation. Once PRA was done, the initial activities undertaken were contour bunding, plantation, and development of pastures and treatment of forest at hilly area. This was done to prevent soil erosion and to increase seepage of water. After this, water storage structures were created. Activities undertaken for this were- construction of two ponds on two nallas, construction of gabien structure and RGM at ten places on nallas, and private land for water and soil conservation, for which people contributed in form of labour. Since for last three years the region was suffering from severe draught, the wages paid were major source of income to farmers. People also participated in identifying users, formation of SHGs, watershed development committee. The expenditure made on various watershed and allied activities are as follows

Table-1: Expenditure on Watershed and Allied Activities in Hemaburdi

Year	Soil & Moisture Conservation	Watershed construction	Plantation & Pastures	Other	SHG	Total
97- 98	1956	7860	12232	274	7800	22322
98-99	7589	112210	2079	16441	10000	138319
99-00	-	57878	-	3380	-	61258
00-01	48711	2688	3000	811	-	55210
01-02	118270	-	2500	18500	-	139270
02-03	297344	397021	3875	50	-	595290

In all Rs 1011669 has been spent in the village in a span of five years. In all, four ponds were constructed creating a surface water potential of 36540 m³, which before intervention was 1530 m³. For repairs and maintenance of these systems, a separate Watershed Development Fund is created, in which PIA contributed a sum equal to one-day wage for every six days of work. This contribution was considered as labour contribution from community. The total amount deposited in WDF is about Rs 49,402. The interest accrued on this deposit is to be used for the repairs and maintenance of the system. The annual interest accrued on this deposit is Rs 1675. Once the water storage structure is created, farmers make their own distribution arrangement to transport the water to their fields.

4.1.2 Governance Structure and Operating Procedure

The WDC consists of fourteen members, unanimously selected by villagers. It consists of five women, two of which are member of SHG. Two members are drawn from Panchayat and six from user group, while one member is from PIA. The members are selected in such a way that all the families in the village can get representation. Duties for WDC are limited up to supervising watershed activities and maintaining accounts i.e. for first five years. As per the guidelines of RGWM, there is no fixed regulation relating to allocation of water, its usage, payment for drawing water or enforcing penalty etc. Hence any member of the user group with needed paraphernalia can draw water from the pond, and there is no restriction on amount of water drawn. However in case of Hemaburdi, as per the rules formed by WDC, farmers have to pay Rs100/pump as one time payment in the beginning of Rabi season. But there is no rule regarding payment of penalty on harming the structures with in Guidelines and WDC rules. Since this year because of good rainfall for the first time farmers are able to draw water from pond such case has not risen and according to WDC such issues can be resolved by physically punishing the responsible person for such act.

4.2 Impact on Tribal Life

Private investment on irrigation

One of the most notable differences seen after the interventions of RGWM has been the investment made by tribal farmers on irrigation paraphernalia. In the span of five years of project implementation, RGWM had constructed four ponds to be used for irrigation. However due to low rainfall in last four years, the water stored in these ponds was not sufficient enough to be used for irrigation and hence the water was being used for domestic purpose only. This was the first year when due to good rainfall farmers could use the water for irrigation. Since RGWM has not created any water distribution network, the farmers made their own investments in creating their own private water distribution channel. The water

stored in ponds is pumped using motors of varying capacities and is transported to individual fields through pipes. There is no community involvement in creation of the distribution network and every farmer makes his own investment. Since the village has only single phase electricity connection, for domestic purpose only, farmers have created their three phase electricity supply by illegal hooking. However this year because of good rainfalls, farmers demanded three months of temporary electricity connection for which they are paying advance amount to MPEB. This advance payment is dependant on the capacity of motor used for pumping, which is Rs 1200 for motor of 2 hp, Rs 1500 for 3 hp motor and Rs 2000 for 5 hp motor. Depending on the distance between water storage structure and respective fields, farmers make decision relating to purchase of the capacity of motor and length of pipes and wire. As per the information obtained from sample survey, in a span of four months Rs 248300 has been spent by fifteen farmers on creating the water distribution network. The expenditure made on various heads is as follows:

Table-2: Private Investment by Farmers on Creating Irrigation Paraphernalia

Name of Expenditure	Amount (in Rs)	% of Total Expenditure
Motor	104000	42 %
Pipe	80000	32%
Wire	43000	17%
Payment to MPEB	21300	9%

As from the table it is evident that except for payment to MPEB, all the expenditure has been incurred on creation of fixed assets. If we look at the expenditure made by sampled farmers on creating water distribution infrastructure per hectare, it comes about Rs 7980/ha. , which is one of the indicators of the level of interest shown by farmers in irrigation. Even though, farmers have invested heavily on creating water distribution network, erratic electricity supply is a major stumbling block in timely irrigation. From the focused group discussions with the farmers it came out that on an average village gets electricity for about two hours per day, and even that is not continuous. Voltage fluctuation is also a major problem which causes break down of motors and farmers have to pay at least Rs 300 to Rs 1000 on its repairs.

Increase in number of cropping

The biggest benefit of watershed interventions to farmers has been the increase in the number of cropping. In absence of any perennial source of irrigation farmers used to take only Kharif crops. This was the first year after initiatives by RGWM, that they were able to irrigate winter crop. As per the secondary information obtained from RGWM, there is also increase in land under Kharif crop which has increased from 65.83 ha to 67.17 ha, while land under Rabi has increased from 13 ha to 54 ha, thus there is an increase of 46% in land under Rabi cultivation. The major crop grown by farmers in this region is wheat. Even though it is their first wheat crop, they have invested heavily in purchase of seeds, fertilizer and insecticide. As per the sample survey the total expenditure on various inputs on total wheat sown area of 15.5 hectares is Rs 33121. The breakup of this cost according to various inputs is as follows:

Table-3: Investment by Farmers on Various Inputs for Growing Wheat

Name of Input	Amount (in Rs)	% of Total Expenditure
Seed	9099	28%
Fertilizer	10067	30%
Insecticide	13955	42%

Migration

There is drastic change in migration pattern. Earlier all of the farmers used to migrate to Malwa and Nimar region during winters and summers to work as agricultural laborer. This year except for landless farmers, there was no migration from the village. On discussion with farmers it was found that nobody wants to migrate even in summers when the pond water will dry up. They said that they will prepare their land for Kharif crops in the summer time and expecting that income from winter crop will be sufficient to meet their expenditure. In focused group discussions with farmers it emerged that farmers are more interested in continuing agriculture within their village then migrating to far flung places. The wages they receive in Malwa and Nimar are to the tune of Rs 50 to Rs 60 per day. At the time of soyabean harvesting it raises upto Rs 80 to Rs 100 per day. However about 80 % of the total amount is spent on meeting basic needs of their family and they are not able to save much. Apart from that they are exploited by non tribal farmers and have to face daily hardships in a new place. However they said that they have learnt a lot about various land management practices from non tribal farmers which they are now implementing in their fields.

5. PADLIYA-SITAPAT WATERSHED

Padliya-Sitapat watershed has command area of 675 hectares of two villages Padliya and Sitapat. These two villages are situated in Tirla block of Dhar district, which is having tribal population of. The villages are about 10 km away from Dhar district headquarters. As per 1991 census, population of Padliya village is about 1253. The village is basically a tribal dominated village, percentage of tribal being 70%, Rajput are 20%, while Brahmin, Jaat and Scheduled Caste constitute the rest of the 10 % population of the village. Literacy rate is 23 %, while sex ratio is 945. Rajput, Jaat and Bhil, all these three communities are having agriculture as their main occupation. As per the focused group discussion with farmers, it was emerged that Rajput and Jaat are landholders, and have control over 60 % of the land. While about 75 % of tribal populations are landholder having control over rest of the 40% of the land and about 25% of tribal in Padliya are landless, who either work as agricultural laborers in the fields of Rajput and Jaat or work in brick making units near the city. Total area of the Padliya village is 818.32 hectares. Out of which 97.87 ha is irrigated by different sources constituting 12 % of total area and about 544.38 ha is unirrigated amounting to 67% of total village area. Out of the 97.87 ha of irrigated land, 50.3 hectares is irrigated by tube well and rest 47.57 hectare is irrigated by pond water.

Sitapat is a small village, neighboring Padliya village having an area of 379.5 ha with population of 665, as given in Census 1991. The cent percent population of this village belongs to Bhil tribe having agriculture as their main occupation. Literacy rate of the village is 3 % while sex ratio is 985. Out of the total village area of 379.5 ha, 77.69 ha i.e. 20.5% of the total area is irrigated while 181.68 ha constituting 48% of the cultivable land is unirrigated. About 77.69 ha of land is irrigated by Government canal, which is not a permanent source of irrigation, as it is constructed to supply water to Dhar district and only surplus water can be used by farmers for irrigation. For last three years when the district was experiencing severe draught, farmers could not draw water from the canal, and only seepage water could be used for irrigation. Rest of the 20.17 ha is irrigated by dug wells.

In absence of a reliable source of irrigation, farmers usually take one rain crop and for rest of the period go to Dhar district and work as laborers at construction sites and engage in other small jobs for example working in shops etc.

In both the villages, tribal do not migrate to far flung areas as they get work within the Padliya village or within the Dhar district. Migration is considered as an activity below prestige. Proximity to Dhar district has ensured livelihood security to tribal in this region where they are assured of work and thereby assured income. There is not much difference in the cropping pattern in both the communities. The tribal who have access to irrigation grow vegetables and fruits as their Rajput counterparts do.

5.1 RGWM Intervention in Padliya-Sitapat

5.1.1 Hardware of System

Under Padliya Sitapat watershed about 675 hectares of area was estimated to be covered, till now 361 hectares have been treated under the program. The estimated watershed area consisted of 68 ha of common land and 607 ha of private land. The area treated under RGWM consists of 68 ha of common land and 293 ha of private land. The major sources of irrigation in the watershed are ponds, wells and tube wells. Before RGWM's intervention there were three ponds, sixteen wells and seven tube wells in total. RGWM started interventions in the village in the year 1997. The PIA agency consisted of government officials from different departments. The action plan followed was as per the guidelines issued. The major activities undertaken for water conservation were construction of six percolation tanks, two RGM, seven gabien structures and one pond. Since the watershed already had water storage structures in the village in form of ponds, wells and tube wells, stress was more on constructing percolation tanks to increase ground water level. In the given watershed PIA worked extensively on establishing demonstration fields to educate farmers about various high yielding varieties of seeds and other such inputs. PIA also stressed on promotion of organic farming in this area. The expenditure made by RGWM in the region under various heads is as follows:

Table-4: Expenditure on Watershed and Allied Activities in Padliya-Sitapat

Year	Soil & Moisture Conservation	Nursery Development	Water Storage Construction	Plantation & Pastures	Agricultural Extension Services	SHG and other activities
97- 98	49500	63000	650000	57075	65500	68000
98-99	7000	48000	370000	84675	28100	72000
99-00	3500	9000	80000	8250	10000	6000

In all RGWM has spent about Rs 1679600 on construction of surface water storage potential of 743000 m³ that earlier was 225000 m³. Earlier area under Rabi cultivation was 165 hectares, which has now increased up to 185 hectares.

5.1.2 Governance Structure and Operating Procedure

There are 21 members in Watershed Development Committee and all of them are from Padliya village. Out of the twenty-one members seven are women. The committee is dominated by Rajput caste members and only two members belong to scheduled tribe. The committee does not have any clear rule specifying water rights to pond. There is no rule relating to water drawing rights, payment for drawing water or penalty on harming water storage structures.

5.2 Impact on Tribal

The total number of farmers in the watershed is 450, out of which 405 farmers have benefited by watershed activities. The caste wise distribution of beneficiary farmers is as follows:

Table-5: Caste Based Distribution of Beneficiaries in Padliya-Sitapat

Name of Caste	Number of Farmers Benefited	Number of Farmers not Benefited
Scheduled Caste	15	Nil
Scheduled Tribe	285	Nil
Other Backward Class	25	Nil
General Category	150	45

It can be gauged from the above table that a large number of beneficiaries belong to Scheduled tribe; however the real benefits are not accrued to them because of their small landholdings. In informal discussions with villagers it came out that the 285 farmers benefiting from the schemes hold only 40 % of the irrigated land while rest of the 60 % land is under control of non tribal farmers. After taking Kharif crop, tribal farmers having small landholdings give their land for shared cropping and become daily wager, as they can not afford to invest in pumps and other equipments.

Increase in Ground Water Irrigated Land

The creation of percolation tank and other structures have increased ground water level in the area. The impact on increase in groundwater level can be assessed from following table:

Table-5: Increase in Groundwater Level Before and After Intervention

Parameter	Before Intervention (1997-98)	After Intervention (2002-03)
No. of wells not having water in summers	16	10
No. of wells having year round water availability	2	8
No. of tube wells not having water in summers	40	25
No. of tube wells having year round water availability	3	15

Both the villages have three-phase electricity connection, which enables them to use ground water through bore wells. However the region is facing severe power scarcity, due to which farmers are unable to do timely irrigation. Some of the Rajput farmers have also invested in generators and diesel engine, which makes irrigation all the more expensive. The number of generator owners in the watershed area is 12 and all of them are Rajput. In this case none of tribal farmers owns generator or diesel engine and thus they are still dependant on unreliable power supply.

6. ISSUES OF CONCERN

The two case studies show the contrast results of interventions by RGWM. At Hemaburdi, where tribal farmers were forced to migrate due to lack of livelihood opportunities, mission's interventions have helped them in living a settled life by creating favorable conditions for agriculture in form of source of irrigation. While in case of Padliya-Sitapat, where tribal are living with non tribal farmers, livelihood opportunities are available in and around their village, source of irrigation has not brought any major change in their life. At Padliya-Sitapat, interventions of RGWM have failed to create member centrality in the lives of tribal

who are not dependant on agriculture as their sole livelihood and who consider working in Dhar district or in the fields of a Rajput farmer as more lucrative occupation. Though the organisation has succeeded in environment regeneration by preventing soil erosion, water conservation etc, but it has miserably failed in improving the livelihood opportunities of tribal in Padliya Sitapat case study.

The second aspect is its failure to provide an equal opportunity to all the people in the village regarding access to the source of water. Water storage structures constructed by RGWM are common property and they are meant to be used by all the farmers in its command area but they serve interests of only few farmers, who can afford to invest in huge paraphernalia required for distribution and transportation of water, in absence of power supply. Thus even though there is a source of irrigation available in the village, due to lack of financial sources required for purchase of pump, pipe and wire, all the tribal farmers are not able to irrigate their fields.

The third aspect of RGWM is its lack of focus. In its design it has adopted the Ralegon Shindi model for environment generation and economic development. However the scale at which it has been working, covering thousands of villages in a short span of five years is leading to dissipation of energy on too many issues. The sequence of activities identified to be undertaken do not follow a natural flow, flexible to the local needs, but become the part of a fixed inflexible routine, to be carried out in accordance with guidelines issued by a central agency. The criteria to be fulfilled under various funding schemes, is leading to imbalance of funds. All these issues result in a loose institutional arrangement at all the levels of administration, which are more evident at micro watershed, where the beneficiaries are unaware of their roles once the mission withdraw from the region and are still dependant on PIA for guidance.