Agricultural Production Through Milli-Watershed Programme under Rajiv Gandhi Watershed Mission

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ABSTRACT

Soil erosion has taken place at very high pace and million of tones of soil have been washed away from hills. The rain-fed area which constitutes about 63% percent of the cultivated land account for only 45% of total food production. The National Agriculture Policy of India has emphasized to attain a growth rate of 4% per annum in the Agriculture Sector. So Government of India with the world Bank has started Pilot Project of 5 years duration. Madhya Pradesh is the second largest rain-fed farming state of the country. The water shed programme endeavors to improve and sustain production and productivity in all categories of land.

Key words: Water shed; Awareness; Participation; Employment;

Watershed development refers to the conservation, regeneration and judicious utilization of all the resources – land, water, vegetative, animal and human - within a particular watershed. Watershed development seeks to bring about an optimal equilibrium in the eco-space between natural resources, humans and animals. The Piploda milli watershed is situated in Ratlam district at piploda block about 40 Km form Ratlam this area has semi-arid sub-tropical climate. Most of the rainfall Is received during mid June to September. In our country about 63% of the net cropped area is rain-fed. So watershed development programme has been introduced as a strategy for increasing the overall development of the rain-fed regions by increasing the availability of moisture and water. Rain-fed areas, crops as well as the population of these regions, suffered both in terms of resource share and the consequent decline in investment in agriculture sector. This has a falling effect on the over all agriculture growth of these regions. Not only the constraint of water availability but also the level of resource degradation was felt acutely in these regions.

Government of India with the World Bank financial assistance has started Pilot Project named as " Rajiv Gandhi Watershed Management Mission". Madhya Pradesh is the second largest rain-fed farming state of the country accounts for 86.04 per cent of rain-fed cultivated area. The watershed development programme endeavors to improve and sustain production and productivity in all categories of land. It endeavors to increase productivity of lands with better returns to the farmers on a sustainable basis through adoption of better technology and cropping patterns.

METHODOLOGY

This study was conducted in Piploda Block of Ratlam district of Madhya Pradesh . There are 15 water shed projects in the district but one watershed project area Piploda was selected randomly. Data were collected through focus group discussion, night meetings and project report and participatory rural appraisal reports. A pilot study was conducted to assess the impact of soil and water conservation work in the water shed area this watershed have covered 8 villages.

RESULTS AND DISCUSSION

The impact of watershed development programme is presented in Table 1. Increasing 106.01 hectare area of arable land at Piploda milli watershed area through soil conservation work and vegetative cover in the watershed area, run-off stopped by small structures have been ascertained. This has resulted in increased agriculture area, tanks and hand pumps, which used to dry up during the summers have been converted into perennial sources of water, the conservation of soil in the farms has resulted in the better productivity of crops. In this Rajiv Gandhi watershed mission change in Socio economics status of the farmers through mobilization of social capital by formation of self help group and

conducting of different training programs for adoption of new technology. Total 34 self help groups, 24 user groups and 19 women thrift and saving groups have been formed and total saving of all those groups presently 632800=00 Rupees for starting micro financing for enhancement of livelihood.

The study showed that the average intensity of cropping came to 177.6 percent in piploda milli watershed programme as compared to 169 percent in bench mark survey year 1998-99. In the impact survey year 2006-07 in the average production of soybean 16.20 qt/ha (increased yield 21.80 percent), average production of maize 22.5 qt/ha (increased yield 40.19 percent), average production of black gram 7.20 qt/ha (increased yield 20.00 percent), average production of wheat 32.15 qt/ha (increased yield 7.56 percent), average production of gram 9.45 qt/ha (increased yield 14.55 percent) and average production of mustard 11.50 qt/ha (increased yield 12.00 percent) and increase area under irrigation 406 ha in milli watershed programme. Increased availability of fodder production, drinking water and up gradation of breed improvement so better than population of animals in Rajiv Gandhi watershed mission year 2006-07 compared to starting of the programme 1998-99. (Table 1).

Table 1 : Impact of watershed development at Piploda block

S.N.	Adoption of behavior	Before (1998-99)	Present status (2006-07)	Area benefited/ increase production
1.	Change in Land use Pattern			
	(a) Arable	3596.34 ha	3687.47ha	106.01 ha
	(b) Non-arable	517.32 ha	426.19 ha	91.13 ha
2.	Change in socio-economic status			
	No. of self help group	0	34	1337 members are benefited
	No. of user groups	0	24	Total saving of till now
	No. women thrift & saving groups	0	19	Rs:632800=00
3.	Change in crop productivity			
	Soybean	13.30 (q/ha)	16.20 (q/ha)	21.80 Percent
	Maize	16.05(q/ha)	22.50(q/ha)	40.19 Percent
	Black Gram	6.00(q/ha)	7.20(q/ha)	20.00 Percent
	Wheat	29.89(q/ha)	32.15(q/ha)	7.56 Percent
	Gram	8.25(q/ha)	9.45(q/ha)	14.55 Percent
	Mustard	10.26	11.50	12.00 Percent
4	Change in area under irrigation	2030 ha	2436 ha	20 Percent
5.	Change in cropping intensity (%)	169 %	177.6%	5.09 Percent
6.	Change in Livestock population			
	Cattle	898	957	6.57 Percent
	Buffaloes	738	831	12.6 Percent
	Sheep and Goat	762	809	6.17 Percent
	Pigs	28	79	182.14 Percent
	Poultry	146	2046	1301.36 Percent
7.	Change in fodder availability	7.00 tonnes / year / cattle	10	42.86 Percent

Motivation and awareness created in watershed development campaign is being used to bring in better adoption of new and scientific agricultural techniques in the Piploda milli watershed. An increase in the area under Rabi crops has been achieved. Farmers are encouraged to take up Ratan jot, Stylo grass, Dinanath grass, subabul, Bamboo or fruit bearing trees on their field bunds (*Morya (2006)* and *Sharda (2001))*.

According to Table 2, Before Project implementation, most of the wells were seasonal water availability in wells 3–4 meters in month of October to December. After implementation of watershed programme increased water table of wells 4-5 meters in between month of October to December. In between January to March only 1-2 meters water available in wells before the project and after the project same time (January to March) water table of wells measure 2-4 meters so increased availability of water is reflected in irrigated area which has increased 406 ha in Piploda milli watershed respectively and before the implementation the programme in the summer season maximum wells are dry so villagers are facing very big drinking water scarcity in the area after the implementation of the programme in the summer season (April to May) increase water table of wells 1-2 meter in

Table 2. Change in water status in the open well

Year (month wise)	Rainfall (mm)	Water availability on wells in meters (month wise)											
		Jan.	Feb.	March	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1998-99 (before)	712	2	1	1	Nil	Nil	Rainy Season				4	3	3
2006-07 (after)	855	4	3	2	23	1	Rainy Season				5	5	4

the project area so supply of drinking water has increased thereby reducing the problem of fetching of water from long distance. Creation of soil and water conservation work have increased ground water level in the watershed area the impact of on increase ground water level can be assessed from Table No. 2 change in the water status in the open wells. Presently the number of perennials wells increased in milli-watershed project.

CONCLUSION

Under the watershed development programme , good impact on agriculture and allied areas like, fertility of soil, production of crops, up-gradation of breed and improvement in decision making power of men and women were realized. Participatory watershed management empowered the people in decision making through accountability of activities.

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