CONSTRAINTS IN ADOPTION OF WATERSHED MANAGEMENT TECHNOLOGY

O.P.Daipuria[1], M.S.Kakran[2] & S.P.Sharma[3]

India's 70 percent cultivation area is under rainfed or dry land farming and contributes only 42 percent of the total food grain production, realizing this fact, seventh five year plan laid emphasis to develop dryland area on the basis of available scientific knowledge. Watershed development was taken up under different programmes by government of India like drought prone area programme (DPAP) intensive development programme (NWDPRA) for rural area. The average productivity of most of the crops Madhya Pradesh is much lower than the national average productivity. Mainly, on account of lack of assured irrigation facilities, even less than 20 percent the government of Madhya Pradesh had given high priority for the development of dryland agriculture on watershed basis.

A watershed refers, in physical terms, to the area lying above drainage point. Water resources are limited and despite of all efforts for increasing irrigation potential, above 50 percent of the cultivated area is estimated to remain without irrigation. The prime object of watershed development programme is to conserve soil and water for higher production. It is however, noticed that inspite of the efforts made by various extension agencies, the adoption of watershed management practices is not up to the expectation. The present study is, therefore, carried out with the objective :- To determine the various constraints faced by the beneficiaries in adoption of watershed management practices.

METHODOLOGY

The investigation was conducted in sheopur district of Madhya Pradesh, where three national watershed development programme were running. Out of which, Davinala watershed of Vijaypur block was selected purposively, since the watershed programme has been started here five years ago. A sample of 100 respondents (50 marginal and 50small) from the 11 villages under watershed development programme, was selected with proportionate random sampling procedure.

The data were collected with the help of structural schedule by personal interview. The schedule was prepared on the basis of objectives of the survey results of the study are interpreted on the basis of frequencies percentages.

RESULTS AND DISCUSSION

1. Adoption of Recommended Technology–The information regarding adoption of watershed management technology by marginal and small farmers has been depicted in table 1.

Table 1. Distribution of respondents according to their level of adoption

S. No.	Extent of adoption	Marginal Farmers	Small Farmers
1.	Low	17 (34)	12 (24)
2.	Medium	20 (40)	22 (44)
3.	High	13 (26)	16 (32)
	Total	50	50

(Figures in parenthesis indicate percentage)

Table 1 indicates that majority of the marginal and small farmers (40% and 44%)

1. Ex. P.G. Student, 2&3. Asso. Prof., Deptt. of Ext. Edu., J.N.K.V.V., College of Agriculture, Gwalior- (M.P.).

respectively) had medium level adoption while 34% of marginal farmers and 32% of small farmers were found to be in low level and high level adoption correspondingly. These findings are in confirmation with the work of Khade et al. (1998), Tailor et al. (1998) and Jondhale et at. (2000).

The information pertaining to practicewise adoption of important soil and water conservation practices is given in table 2.

The data in table 1 indicate that the recommended practices, namely, contour bunding, gully plucking, sunken pound, stop dam, contour cultivation, surface water resources, under ground water resources and soil erosion were adoptid only by 6,9,7,9,10,10,12, and 6 per cent of respondents respectively.

Table 2. Adoption of important soil and water management practices

S. No.	Recommended watershed management practices	Frequency	(%)
1.	Contour bunding	06	06
2.	Gully Plucking	09	09
3.	Sunken pound	07	07
4.	Stop dam	09	09
5.	Contour cultivation	10	10
6.	Crop rotation	24	24
7.	Strip cropping	17	17
8.	Milked Cropping	29	29
9.	Recommended fertilizer dose	34	34
10.	Sun face water resources	10	10
11.	Under ground water resources	12	12
12.	Soil erosion	06	06

Sum of percentages is more than 100 due to multiple responses.

2. Technological Constraints–Opinions of beneficiaries on technology constraints in adoption of watershed technology have been obtained. The percentage and rank is depicted in table 3.

When questions were asked to the farmers to know the reasons of adopting the watershed management technology, farmers opinioned that untimely availability of watershed based production technology, lack of knowledge about improved varieties and lack of training facilities were the main technological constraints.

Table 3. Technological constraints faced by beneficiaries in adoption of watershed technology

S.No.	Constraints	Number	%	Rank
1.	Lack of knowledge about improved varieties	25	25	II
2.	Untimety availability of watershed based production technology	30	30	II
3.	Lack of training facilities	20	20	III

3. Economic Constraints–The percentage of beneficiary respondents regarding economic constraints has been shown in table 4.

Table 4. Economic constraints opinioned by respondents in adoption of watershed technology

S.No.	Constraints	Number	%	Rank
1.	Lack of finance facilities	34	34	II
2.	Unavailability of finance in time	37	37	I
3.	Fragmentation of land holding	27	27	IV
4.	High inputs cost like seeds fertilizers and pesticides etc.	31	31	III

The table 4. reveals that maximum number of respondents were of the opinion that unavailability of finance in time was the economic constraint in non-adoption of watershed technology.

Table 5. Infra-structural constraints suggested by respondents in non-adoption of watershed technology

S.No.	Constraints	Number	%	Rank
1.	Lack of irrigation facilities	36	36	I
2.	Uncertainty about the availability of irrigation water	28	28	II
3.	Untimely and inadequate supply of fertilizer., seeds etc.	26	26	III
4.	Lack of transportation facilities	07	07	IV

4. Infra-Structural Constraints–Suggestions of the respondents have been obtained on infra-structural constraints in non-adoption of watershed technology. The percentage and rank have been shown in table 5.

It could be seen from the table 3 that lack of irrigation facilities was ranked first as the infra-structural constraint in non-adoption of watershed technology.

CONCLUSION

The percentage of adoption of watershed technology for both marginal and small farmers was low. Some recommended watershed management practices, viz, contour bunding, sunken pound, soil erosion, gully plucking, stop dam and contour cultivation were adopted by a few respondents. It is concluded from the findings that some constraints were responsible for this low adoption. The beneficiaries opinioned that unavailability of finance in time, untimely availability of watershed based production technology, high input cost like seeds, fertilizers and pesticides etc. and lack of irrigation facilities were the major constraints in adoption of watershed management technology. If these problems of the beneficiaries be solved, they can be more benefited of watershed management technology.

REFERENCES

1. Jondhale, S.G., Jadhav, S.R., and Fatak, U.N. (2000) Reasons for non-adoption of low cost and no cost technology in watershed development project Maha. J.Extn. Edn.19: 117-120.
2. Khade, A.H., Taywade, A.S., and Kale, P.E., (1998). Knowledge and adoption of recommended dryland technology of kharif Jowar. Maha. J. Extn. Edn. 17:224-228.
3. Tailor, R.S., Pande, A.K., and Sonaria, Y.C. (1998). Socio-personnel correlates of knowledge and adoption of dry land farming practices of farmers of watershed area. Madhya J. Extn. Edn. 1:20-25.

• • •