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RESEARCH PAPER

A study on knowledge of watershed farmers on various NRM practices in watershed areas of Andhra Pradesh state

P. ARCHANA*, M. JAGAN MOHAN REDDY[1] AND I. SREENIVASA RAO
Department of Agricultural Extension, College of Agriculture, Prof. Jayashankar Telangana State Agricultural University, Rajendranagar, HYDERABAD (TELANGANA) INDIA (Email : archana.palle@gmail.com; illuris@gmail.com)

Abstract : The paper describes the level of knowledge of watershed farmers on various NRM practices in watershed areas of Andhra Pradesh state. The results indicated that majority of the watershed farmers fell under the category of medium (36.25%) level of knowledge followed by low (33.33%) and high (30.42%) level of knowledge. Further the rank wise analysis of level of knowledge of watershed farmers on various NRM practices infers that the usage of check dams to harvest the water has been perceived as first rank followed by usage of percolation tank for increasing the groundwater (II rank) and the least preferred knowledge items were NRM is possible only by the community participation (XIX rank), the grass which is highly recommended as vegetative barrier (XIX rank), the plants which are highly recommended for live fencing (XVIII rank) and gully formation can be checked by either building check dams or increasing width of gully, leaving it as it is and no idea (XVIII rank).

Key Words : NRM, Watershed farmers, Knowledge

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INTRODUCTION

The nature and status of natural resources play a pivotal role for sustainable yields in various crops. The potentiality of these resources especially like soil and water is decreasing in alarming propositions, there by effecting farming situation as well as crop production both at micro and macro level. The isolated approach of natural resource management does not yield expected results whereas community based management derives maximum benefits to the farmers in terms of soil, water and moisture conservation for sustainable use of these resources for better crop production. There is every need to gauge the degree of natural resource management behaviour of the farmers for their sustainable use. Keeping this in view, the present investigation on a study on knowledge of watershed farmers on various NRM practices in watershed areas of Andhra Pradesh state was carried out.

MATERIAL AND METHODS

The state of Andhra Pradesh and the three regions *i.e.* Telangana, Coastal Andhra and Rayalaseema and

*** Author for correspondence:**
[1]Krishi Vigyan Kendra, Palem, MAHABOOBNAGAR (TELANGANA) INDIA (Email : jaganmaligi@yahoo.co.in)

from each region one district *i.e.* Mahaboobnagar from Telangana, Prakasham from Coastal Andhra and Anathapur from Rayalaseema were selected purposively. From each district two IWMPs, from each IWMP area one mandal, from each mandal four villages and from each village ten watershed farmers were selected randomly, thus, a total of six (6) IWMPs, six (6) mandals, twenty four (24) villages and two hundred and forty (240) farmers were considered as sample for the study.

Knowledge test developed in the present study can measure the level of knowledge of watershed farmers on various NRM practices as it showed the greater degree of reliability and validity. All the 30 items in the knowledge test read out to the watershed farmers after establishing rapport with them. The watershed farmers were asked to answer the items by themselves. A score of two and one was assigned for correct and wrong answer for each item, respectively and the total number of correct responses given by watershed farmers out of the 30 items was the knowledge score obtained by him or her. Thus, the maximum and minimum possible scores are 60 and 30, whereas the obtained scores were 50 and 35. The watershed farmers were grouped into three categories based on exclusive class interval technique.

RESULTS AND DISCUSSION

It could be indicated from the Table 1 that majority of the watershed farmers fell under the category of medium (36.25%) level of knowledge followed by low (33.33%) and high (30.42%) level of knowledge. The medium followed by low level of knowledge of watershed farmers might be due to lack of inquisitiveness to understand the logistics of implementation of various NRM activities. Farmers used to practice the agriculture technologies without knowing the rationale on implementation of these practices. This finding is in conformity with those of Doli (2006) and Raju (2002).

The Table 2 indicates the rank wise analysis of level of knowledge of watershed farmers on various NRM practices infers that the usage of check dams to harvest the water has been perceived as first rank followed by usage of percolation tank for increasing the groundwater (II rank) and knowledge on important natural resources (III rank). The least preferred knowledge items were NRM is possible only by the community participation (XIX rank), the grass which is highly recommended as vegetative barrier (XIX rank), the plants which are highly recommended for live fencing (XVIII rank) and gully formation can be checked by either building check dams or increasing width of gully, leaving it as it is and no idea (XVIII rank).

The harvesting of water through check dams is more visible and thereby the farmers could gauze easily the importance of check dams. It is the same in case of percolation tanks where in the groundwater level recharges effectively which can be easily perceived by the farmers. The farmers could easily identify the important natural resources as they are the pre requisite and continuously use for crop cultivation. The less knowledge on possibility of NRM only through community participation, grass as a vegetative barrier, live fencing and stoppage of gully formation might be due to not having direct influence of these practices on crop cultivation and also not visualizing the impact within a short period of time. The government should take measures to inculcate team spirit in forming the groups among the watershed farmers to follow the community approach. Measures may be taken upto conduct more awareness programme on highlighting the importance of grass species and other plants used as vegetative barriers and live fencing. Skill oriented training programmes may be conducted by the state agriculture universities and KVKs to impart the skill to check the gully formation during the heavy rains.

Conclusion:

Officials of IWMP should organize more specialized training programmes to improve the knowledge level of the farmers on various NRM activities. New ICT methods should be evolved for quick and easy transfer of technical information among the farmers.

Table 1 : Distribution of watershed farmers according to their level of knowledge **(n=240)**

Sr. No.	Category	Class interval	Frequency	Percentage
1.	Low level of knowledge	35-40	80	33.33
2.	Medium level of knowledge	40-45	87	36.25
3.	High level of knowledge	45-50	73	30.42

Table 2 : Rank wise analysis of level of knowledge of watershed farmers on various NRM practices **(n=240)**

Sr. No.	Practice /technology used for NRM	Response categories		T.S	M.S	Rank
		Yes	No			
1.	The important natural resource is: A. soil B. water C. vegetation D. all	180	60	420	1.75	III
2 .	Watershed is: A. small area B. specific area with common drainage point C. area with nala D. no idea	120	120	360	1.50	XI
3.	Integrated farming is beneficial for : A. higher benefits B. sustaining the production C. efficient utilization of resources D. all	100	140	340	1.42	XII
4.	NRM is possible only by the community participation. Yes / No	59	181	299	1.25	XIX
5.	NRM is possible only by public budget. Yes/ No	144	96	384	1.60	VI
6.	The excessive use of the natural resources is harmful. Yes/ No	150	90	390	1.63	V
7.	Soil is being eroded due to : A. rain water and wind B. excessive/improper land levelling C. A and B D. no idea	89	151	329	1.37	XV
8.	Bunds can be strengthened by : A. planting grasses on it B. compacting the bund C. no idea D. A and B	170	70	410	1.71	IV
9.	Vegetation helps in conservation of soil by : A. checking the erosion B. addition of litter material C. checking the speed of runoff D. all	130	110	370	1.54	IX
10.	Live fencing in the field can be used for : A. to reduce soil erosion C. to reduce water loss B. A and D D. to increase soil fertility	100	140	340	1.42	XII
11.	Loose boulder structure can be used for : A. to reduce soil erosion B. to reduce water velocity C. to increase moisture in the soil D. all the above	180	60	420	1.75	III
12.	Soil conservation means : A.Using and managing land based on its capability B. Application of practices that do not damage the soil C. A and B D. None	90	150	330	1.38	XIV
13.	Removing the trees leads to: A. high erosion B. no effect C. increase fertility D. A and C	136	104	376	1.57	VII
14.	Fruit plantation on bunds helps in A. soil infertility B. conserving soil and water C. Water impurification D. all	91	149	331	1.38	XIV
15.	The plants which are highly recommended for live fencing……..	81	159	321	1.34	XVIII
16.	The grass which is highly recommended as vegetative barrier is…….	60	180	300	1.25	XIX
17.	Avoid repletion of jowar crop in the same filed for controlling of …….	84	156	324	1.35	XVII
18.	Transformation of soil in uncultivable fields will increase soil fertility Yes/No	98	142	338	1.41	XIII
19.	Construction of ‘stone bunding’ can arrest soil erosion Yes/No	190	50	430	1.79	II

Table 2 : Contd.……..

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20.	Water harvesting structure in the field is: A. farm pond B. check dams C. dug out pond D. all	134	106	374	1.56	VIII
21.	Sunken pits can be used for A. to conserve excess runoff water B. to protect the soil and water C. to conserve moisture in the soil D. all of the above	129	111	369	1.54	IX
22.	Gully formation can be checked by: A building by check dams B increasing the width of the gully C. Leaving it as it is D. no idea	81	159	321	1.34	XVIII
23.	Dug out pond can be used for : A. to store the waste water B. to increase ground water recharge in nearest wells and bores C. A and B D. no idea	87	153	327	1.37	XVI
24.	Check dams can be used to harvest the water Yes/No	200	40	440	1.83	I
25.	Stabilization of gullies and construction of check dams can be used for increasing ground water recharge: Yes/No	150	90	390	1.63	V
26.	Small percolation tanks and mini percolation tanks can be used for increasing ground water recharge: Yes/No	190	50	430	1.79	II
27.	Staggered trenches on slopes can be used for……	126	114	366	1.53	X
28.	Water absorption trench at the foot of hills can be used for conserving water….Yes/ No	134	106	374	1.56	VIII
29.	Water harvesting and recycling structures are useful for providing irrigation to the crops: Yes/no	144	96	384	1.60	VI
30.	Check walls can be used for.....	144	96	384	1.60	VI

REFERENCES

Berjesh, A. and Ajay, K. (2009). Knowledge of farmers about soil and rainwater conservation technology and its determinants. *Agric. Sci. Digest*., **29**(4): 283-286.

Chandran, K.N. (1991). A critical analysis of agriculture technology utilization in Maheswaram watershed project in Ranga Reddy district of Andhra Pradesh. M.Sc. (Ag.) Thesis, Acharya N.G. Ranga Agricultural University, Hyderabad, A. P. (INDIA).

Dey, P. and Sarkar, A.K. (2011). Revisiting indigenous farming knowledge of Jharkhand (India) for conservation of natural resources and combating climate change. (Special Issue: Traditional knowledge in disaster prediction/forecasting, management and climate change.) *Indian J. Traditional Knowledge*, **10** (1) : 71-79.

Doli, S. (2006). Sustainability of natural resource management in watershed development project. Ph.D Thesis, University of Agricultural Sciences, Dharwad, KARNATAKA (INDIA).

Eswarappa, G. (1991). An analysis of coordination and some management aspects of watershed development programme in Karnataka. Ph. D Thesis, Andhra Agriculture University, Hyderabad, A.P. (INDIA).

Iqbal, M. (1991). A study on the impact of watershed development programme in Nalgonda district of Andhra Pradesh. M.Sc. (Ag.) Thesis, Andhra Agriculture University, Hyderabad, A.P. (INDIA).

Jaiswal, N.K., Purnadare, A.P. and Yadappanwar, A.V. (1982). Planning and management of watersheds under drought prone area programme. *J. Rural Develop*., **4** :739.

Kadam, J.R., Patli, V.G. and Haridwar, D.P. (2001). Knowledge and adoption of soil and water conservation practices in watershed development project. *Maharastra J. Extn. Edu.*, **20** : 138-140.

Khan, M.S. (1999). Critical analysis of eco-friendly technologies in rice cultivation. A study in an adopted village-kondubhotlopalem. M.Sc. (Ag.) Thesis. Acharya N.G. Ranga Agricultural University, Hyderabad, A.P. (INDIA).

Krishnamohan, R. (1992). Impact of social forestry programme on rural beneficiaries in Chittor district of Andhra Pradesh. M.Sc.(Ag.) Thesis, Andhra Agriculture University, Hyderabad, A.P. (INDIA).

Krishnamurthy, M. (1993). A study on adoption behaviour of beneficiaries towards recommended practices of watershed development programme in Ananthpur district of Andhra Pradesh. M.Sc. (Ag.) Thesis, Andhra Agriculture University, Hyderabad, A.P. (INDIA).

Prasad, K. (1990). A study on knowledge and adoption behaviuor of farmers towards recommended practices in

Yerracheruvu model watershed development programme in Anatapur district of Andhra Pradesh. M.Sc. (Ag.) Thesis, Andhra Agriculture University, Hyderabad, A.P. (INDIA).

Raju, A. (2002). Analysis of selected factors responsible for sustainability of major crops production in a watershed area as perceived by farmers in Medak district of Andhra Pradesh. M.Sc. (Ag.) Thesis, Acharya N.G. Ranga Agricultural University, Hyderabad, A.P. (INDIA).

Rao, D. (1988). Impact of improved dryland agricultural technology in Chevella and Potuulabogunda model watershed development project in Jogipet taluk of Medak district in Andhra Pradesh. M.Sc. (Ag.) Thesis, Acharya N.G. Ranga Agricultural University, Hyderabad, A.P. (INDIA).

Reddy, C.V.G. (1996). An analysis of people participation in watershed development programme in Andhra Pradesh. Ph.D. Thesis, Acharya N.G. Ranga Agricultural University, Hyderabad, A.P. (INDIA).