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CONSTRAINTS PERCEIVED BY FARMERS IN ADOPTION OF AGRI-HORTI CROPPING SYSTEM IN NORTH BIHAR

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Abstract: Diversification in crop production through horticultural crops can bring additional income and employment in the rural areas as compared to the traditional cereal based farming. The present study was undertaken to know the various constraints associated with non adoption of agri-horti cropping system in North Bihar. The major social constraint faced by the farmers was lack of group interest (34.0%). Among the psychological constraint lack of knowledge and skill (26.0%) was given 1st rank. Lack of technical know-how (32.0%) and lack of planting practices (26.0%) were found first and second technological constraint associated with non-adoption of agri-horti system .The other constraints perceived by farmers were shortage of labour (40.0%), non-availability of healthy planting material and inputs in time (20.0%), frequent occurrence of flood (36.0%) and lack of effective market facility (40.0%) in North Bihar condition. Agri-horti constraints analysis constitutes one of the important methods for strengthening feedback mechanism between tree growers and scientists and also for popularization of agri-horti cropping system technology.
Keywords: Constraints, Agri-horti technology, Adoption, Farmers.

INTRODUCTION

Bihar is predominantly an agricultural state where hardly eleven percent of the total geographical area is under forest tree vegetation which is below than the minimum standard of 33.33 per cent as envisaged by National Forest Policy for maintaining the eco-economic balance of the region. Natural forest alone cannot meet the demand of fuel, wood, timber and other wood products and has to be supplemented by plantation in farm lands.

Diversification of present cropping pattern couple with development of suitable technology packages is the need of the day to cope with ever increasing demand of diversified produced and assured income. Under current changing scenario, the horizontal lands cannot be extended but vertically it can be increased many folds through development of agro-forestry land use system. Agro forestry is gaining importance as land use practice in different parts of Bihar state with emphasis on sustainable agriculture. Over the year different kinds of agro-forestry systems and practices have been developed and being evaluated for

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their productivity and sustainability (Puri and Nair, 2004). Agri-horticulture system as an alternative land uses system help in conservation of vegetation, soil and nutrient and provides some additional production and income from the unutilized interspaces on a sustainable base.

The acceptance/rejection of agri-horticulture system technology by the farmer has believed to be the consequence of various factors responsible for them. When individual get exposed to an existence of a new ideas/methods/practices/technology, a number of factors directly affects on the pace as well as level of adoption and non-adoption by the farmers.

"Farmers perception" of constraints associated with non-adoption of agri-horti technology will help to establish a strong feed-back mechanism between farmers and scientists. Without analysis of the constraints, it is impossible to diffuse the technology among the farming community. With this intention, farmers responses were gathered to know the existing constraints associated with non-adoption of the agri-horti cropping technology. Keeping in view the above facts the study was conducted to analyze the constraints associated with non-adoption of recommended agri-horti cropping system by the farmers in North Bihar.

METHODOLOGY

The study was conducted in Pusa blocks of Samastipur and Dholi block of Muzaffarpur district of North Bihar where intensive agro-forestry plantation was practiced and also had maximum areas of orchard plantation. The selected villages were Harpur, Birauli, Malinagar , Saidpur and Balha belonged to Samastipur district and Lotan, Bakhari, Nemopur, Sakra and Pilkhi belonged to Muzaffarpur district. Fife respondents were taken from each of the selected villages. Thus, a total number of 50 farmers were constituted as the sample for the present study. The data were collected by personal interview method by using pre-tested interview scheduled developed for the study and data were analyzed by using appropriate statistical methods.

RESULT AND DISCUSSION

The constraints were divided in to eight different categories viz. social, psychological, technological, economical, personal and family, input related, management and business constraints to establish a strong feedback mechanism between farmers and research scientists for accelerating the rate of adoption of the recommended agri-horti cropping system.

Table 1. Constraints faced by the farmers in adoption of agri-horti cropping technology in North Bihar

Sl.No.	Constraints	Respondents (N=50)		
		Frequency	Percentage (%)	Rank
A.	**Social constraints**			
1	L Lack of co-operation by fellow farmers	08	16.0	II
2.	Lack of group interest	17	34.0	I
3.	Lack of group control on cattle grazing	07	14.0	III
4.	Lack of strong leadership	06	12.0	V
5.	Availability of undesirable planting materials at very much high rate in the name of new hybrid.	04	08.0	VI
6.	Lack of marketing of planting material	08	16.0	II
B. Psychological constraints				
1.	Lack of knowledge and skill	13	26.0	I
2.	Lack of interest	12	24.0	II
3.	Lack of motivation	10	20.0	III
4.	Lack of positive attitude	06	12.0	V
5.	Lack of risk bearing ability	09	18.0	V
C. Technological constraints				
1.	Lack of technical know – how/do-how	16	32.0	I
2.	Lack of plantation practice	13	26.0	II
3.	Lack of technical literature	10	20.0	IV
4.	Costly technology	11	22.0	III
D. Economic constraints				
1.	Shortage of labourers	20	40.0	I
2.	Costly input	12	24.0	III
3.	Unavailability of suitable land	18	36.0	II
E.	**Personal and family constraints**			
1.	Lack of time due to family assignments	05	10.0	IV
2.	Lack of family interaction	20	40.0	I
3.	Lack of skill	15	30.0	II
4.	Lack of family cooperation	10	20.0	III

F. Availability of inputs constraints

1.	Non- availability of healthy seeds and inputs in time	10	20.0	I
2.	Non-availability of healthy cuttings	10	20.0	I
3.	Non-availability of healthy stump	10	20.0	I
4.	Non-availability of seedlings	10	20.0	I
5.	Non-availability of saplings	08	16.0	II
6.	Non-availability of E.T.P.	02	04	III

G. Management constraints

1.	Frequent flood occurrence in planted /forest area	18	36.0	I
2.	High damage loss and mortality of trees	11	22.0	II
3.	Lack of irrigation and drainage facilities.	09	18.0	III
4.	Lack of knowledge about 1WM	03	06	IV
5.	Lack of knowledge about 1DM	03	06	IV
6.	Lack of knowledge about 1PM	03	06	IV
7.	Lack of knowledge about 1NM	03	06	IV

H. **Local business constraints**

1.	Lack of marketing facilities	20	40	I
2.	Low cost of timber in local market	10	20	II
3.	Lack of local wood based industries	10	20	II
4.	Lack of local Non-wood based industries	06	12	IV
5.	Lack of local transport net work	04	08	V

A perusal of Table-1 reveals that out of six social constraints perceived by the respondents, lack of group interest ranked first (34.0%) followed by lack of co-operation by fellow farmers and lack of marketing of planting material as their second constraints (16.0%).This finding is in line with the finding of Kadam and Borse (1993). Lack of group control on cattle grazing (14.0%) was assigned 3rd ranked whereas the lack of strong leadership (12.0%) ranked fourth. However, the last rank was assigned the availability of undesirable planting materials at very much high rate in the name of new hybrid.

Among the psychological constraint lack of knowledge and skill (26.0%) was given 1st rank followed by lack of interest (24.0%) ,lack of motivation (20.0%), lack of positive altitude (12.0%) and lack of risk bearing ability(18.0%) were reported by the different respondent. Lack of technical know-how (32.0%) and lack of planting practices (26.0%) were found first and second technological constraint associated with non-adoption of agri-horti system. Shortage of labourers (40.0%), unavailability of suitable land (36.0%) and costly input (24.0%) were found first, second and third economic constraints expressed by the farmers respectively. This finding is in line with the finding of Kumar (1998), Sudhakar (2002) and Dudhate & Wangikar (2003).

Table-1 also indicated that among the personal and family constraints the first constraints expressed by 40.0% of the respondents were the lack of family interaction followed by lack of skill (28.0%) and lack of co-operation (20.0%). Lack of family assignments was assigned as the fourth constraints by the respondents. The non-availability of healthy seeds in time, healthy cutting, healthy stumps and seedling were the first input constraints expressed by 20.0% of respondents while non-availability of saplings (16.0%) ranked second constraint. However, non-availability of E.T.P. (4.0%) was reported by the different respondents as third constraints. This finding is in accordance with the findings of Dudhate & Wangikar (2003), Thomas et. al. (2005) and Sharma & Singh 92013.

Among the management constraints, the frequent flood occurrence in and around planted seedlings, samplings and new and old tree stands ranked first as it was perceived by 36.00% of farmers. The high damage loss and mortality of trees (22.0%) and lack of irrigation and drainage facilities (6.0%) were the second and third management constraints expressed by the respondents while lack of knowledge of integrated pest management (I.P.M.), Integrated Disease management (I.D.M.)., Integrated Nutrient Management (INM) were also important constraints perceived by 6.00% farmer as they ranked fourth and fifth, sixth respectively. This finding is in line with the findings of Kumar (1998).

Lack of marketing facilities (40.0%) was the first business constraint expressed by the respondent about the adoption of agro-horti technology. Low cost of timber in local market (22.0%) was the second major business constraints. Lack of local wood based industries (18.0%) was the third constraints reported by the respondents.

CONCLUSION

The constraints analysis revealed that the major constraints identified were lack of group interest, lack of knowledge and skill, lack of technical know-how, shortage of labour,

non-availability of healthy planting material and inputs in time, frequent occurrence of flood and lack of effective market facility. Identifying the constraints faced by farmers of North Bihar will serve as a useful feedback to the research system for designing agri-horti cropping system technologies for large scale recommendation so as to share the benefits of development. It will aid in technology change and improvement in any sphere, increase economic returns and enhance overall development process of the state.

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