



Training Needs Assessment of Farmers of Bihar : A Zone Wise Analysis

ABHAY KUMAR, ANIL KUMAR SINGH, UJJWAL KUMAR, KM SINGH,
RKP SINGH AND RC BHARATI

ICAR Research Complex for Eastern Region, Patna, Bihar, India

ABSTRACT

In the present system of imparting training to farmers, the training areas need are pre-decided by the planners which often do not match with the actual requirement, and do not fulfil the desired objectives of the training. Also, the farmers become uninterested in getting their skill improvement in the areas not suited to their needs. Keeping the above facts in mind, a study was undertaken during 2009-12 at ICAR RCER, Patna with the objectives to study the socio-economic attributes of farmers and field functionaries, to identify the training needs of farmers and field functionaries, and to suggest suitable policy recommendations. Data were collected through well-structured schedules developed for the purpose from 25 randomly selected farmers representing different socio-economic groups from each village selecting two villages from each block, two blocks from each districts and two districts from each agro-ecological zones of Bihar. Results indicated that input dealers should be trained on general agricultural aspects like safe use of pesticides, spraying techniques etc. as they are one of the important sources of information for the farmers. More time should be given on skilled demonstration, field trips, exposure visits so as to increase adoption of the technology.

Keywords: Farmers training needs, assessment, technology, Bihar, Zone

ARTICLE INFO

Received on : 03-04-2018
Accepted on : 04-06-2018
Published online : 07-06-2018

INTRODUCTION

Bihar with a geographical area of 94.2 thousand square km is divided by river Ganges into two parts, the north Bihar with an area of 53.3 thousand square km, and the south Bihar having an area of 40.9 thousand square km. Geographically the state is located between 24°20' and 27°31' north latitude and between 83° 19' to 88° 17' east longitude. Agro-climatically the state falls under middle Gangetic plains region. The state lies 53 metres above the mean sea level. The state comprises of two distinct regions viz. North Bihar and South Bihar. The river Ganges separates the state into North and South (Salam *et al.*, 2013).

Rai and Singh (2008) observed that majority of farmers belonged to low socio economic status. Highly demanded areas for training were crop planning, water conservation technique and irrigation and water management and significant association was found between socio economic statuses and training needs.

Bajpai *et al.*, (2007) reported the major areas in which farmers needed more considerations were plant protection measures, seed treatment, fertilizer treatment, improved and hybrid seed varieties, seed rate and spacing and land preparation. Regarding the plant protection measures, farmers wanted knowledge about name of insecticides and pesticides, dose / quantity of use and also the methods of use of those chemicals. Same in the area of seed treatment and fertilizer management they wanted to know the improved high yielding varieties that enhance the productivity.

*Corresponding Author Email : akumar1904@rediffmail.com

Rajput *et al.* (2007) concluded that majority of the *Bt* cotton farmers had expressed their need for training on *Bt* cotton technology. The analysis of correlation of selected characteristics like age, education, land holding, area under *Bt* cotton, annual income, farming experience, socio-economic status, social participation, scientific orientation were found positively and significantly towards their training needs. They also observed that majority of *Bt* cotton farmers gave highest emphasis of training needs on features of *Bt* cotton technology, insect scouting, detection of ETL of different pests, application of manures and fertilizer management, various *Bt* cotton varieties available in the market, hybrids features and its cultivation practices, harvesting and marketing of *Bt* cotton.

Landgeand Tripathi (2006) observed that the extension functionaries (Kisan Mitras) perceived, crop production, vermicomposting, public health and sanitation, seed production technology, medicinal plant growing, and farm equipment management, as the top five most-needed training areas in the agriculture and allied areas. Further in livestock, they gave preference to feeding, processing of milk and milk products, breeding of cattle and buffaloes, health care of animals and financial management, and feed conservation techniques. While in agriculture particularly the most needed training areas were seed treatment, land preparation, irrigation management and training in sowing techniques.

The state of Bihar is being talked about as a sleeping giant of Indian agriculture. The National Commission on Farmers has concluded that Bihar and Eastern India present uncommon

opportunities for becoming another “fertile crescent” even as the present Fertile Crescent (Punjab, Haryana and Western Uttar Pradesh) have reached a plateau in terms of productivity and are facing a state of economic and ecological distress. Water, the lifeline of agriculture, is abundant in Bihar and the real issue is not availability but its management. In order to increase the overall production and profitability in agriculture, the farmers of the region need to be trained in latest techniques and innovations (National Commission on Farmers, 2006).

In the present system of imparting training to farmers, the training areas need are pre-decided by the planners which often do not match with the actual requirement, and do not fulfil the desired objectives of the training. Also, the farmers become uninterested in getting their skill improvement in the areas not suited to their needs. Keeping the above facts in mind, a study was undertaken during 2009-12 at ICAR RCER, Patna with the following objectives:

- 1) To study the socio-economic attributes of farmers and field functionaries
- 2) To identify the training needs of farmers and field functionaries
- 3) To suggest suitable policy recommendations

MATERIALS AND METHODS

Based on soil characterization, rainfall, temperature and terrain, three main agro-climatic zones in Bihar have been identified. These are: Agro Climatic Zone – I (North West Alluvial Plain), Agro Climatic Zone – II (North East Alluvial Plain), Agro Climatic Zone-III (South Alluvial Plain), each with its own potential and prospects. Out of total 38 districts in Bihar, 13 districts belong to ACZI, 8 Districts to ACZ II, and 17 Districts to ACZ III. These zones differ in cropping patterns, soil characteristics and availability of alternative sources of irrigation (Singh *et al.*, 2014).

For the collection of data, two districts from each agro-ecological zone were selected randomly. From each selected districts, two blocks and from each block two villages were

selected and from each village 25 farmers representing different socio-economic groups were selected randomly. Data were collected through well-structured schedules developed for the purpose.

RESULTS AND DISCUSSIONS

Socio economic characteristics

District-wise demographic characteristics of selected households of Bihar have been depicted in Table 1. It is evident from the table that Joint family is still the preferred family system in Jamui district whereas in other districts nuclear family system is preferred. The percentage of households of general caste group was more in Jamui and Patna districts as compared to other districts. In Katihar, the selected households were uniformly distributed among general, OBC and SC/ST caste groups whereas in other districts the percentage of SC/ST households was found less. It is also clear from table that higher education was opted by farmers of Zone I and Zone III, whereas the percentage of graduates was minimum in the villages of Zone II. Percentage of illiterates was high in Vaishali (22 %) and Katihar (34 %). The percentages of illiterates in selected households were very less ranging from 2 % to 8 %. Agriculture was the main occupation in all the three zones.

An animal husbandry/dairy practice was found the main secondary occupation in all the zones followed by labour/others. Labour is the secondary occupation of 21 % HH in Zone II as against 8 % and 6.5 % in Zone I and II respectively. The percentage of small and marginal farmers is more in Zone I than the other two zones. The association of farmers with any society is more in Zone II in general and Darbhanga in particular. It is mainly because of association of them with the fisheries society to whom public water bodies are leased. The average land holding is maximum in Katihar and minimum in Vaishali district. The leasing pattern of land was found more common in Katihar district. No such pattern was observed in Patna district. Cultivation of cash crops may be one of the reasons.

Table 1: District-wise demographic characteristics of selected households of Bihar (in %)

Particulars	Zone I		Zone II		Zone III		
	Vaishali	Darbhangha	Katihar	Purnia	Patna	Jamui	
Family Type	Joint	31	10	48	54	53	78
	Nuclear	69	90	52	46	47	22
	General	32	1	25	12	77	59
Caste	OBC	53	97	40	87	19	38
	SC/ST	15	2	35	1	4	3
Educational Status	Graduate & above	11	11	9	8	25	13
	Matric & Intermediate	35	52	30	32	49	44
	Below matric	32	32	27	54	24	35
	Illiterate	22	5	34	6	2	8

Crops and cropping system

Paddy is the most prevalent *Kharif* crop in all the districts/zones. However, Jute is another important *Kharif* crop of Purnia district (Table 2). Wheat, potato and maize are

the important *rabi* crops of all the districts. Among summer crops, vegetables and Moong/Urd are taken by farmers in Zone II and III. But for farmers of Zone II, Boro rice and maize are the main crop apart from vegetables.

Table 2: Principal crops grown in selected districts (in %)

Crop Season	Crops	Vaishali	Darbhanga	Patna	Jamui	Katihar	Purnia
<i>Kharif</i>	Paddy	96	49	99	95	98	100
	Maize	38	53	57	54	16	47
<i>Rabi</i>	Wheat	92	100	95	93	99	100
	Lentil	9	95	70	61	1	-
	Potato	61	99	85	75	43	73
	Vegetables	23	93	78	53	50	24
	Maize	11	80	72	51	71	93
<i>Summer</i>	Moong/Urd	39	92	0	24	1	-
	Vegetables	22	82	10	12	36	48
	Paddy	-	-	-	-	27	1
	Maize	-	5	-	-	15	48

Trainings obtained

The details of trainings obtained by farmers are shown in Table 3 below. It was found that the farmers of Zone II are less exposed to trainings than the farmers of other Zones. The farmers of Jamui have taken maximum numbers of trainings

on almost all aspects of agriculture whereas the selected farmers of Katihar have not participated in any training programmes and only meager percentage of farmers of Purnia (2%) have been imparted training on crop production technologies.

Table 3: District wise details of training obtained (in %)

Area of training	Vaishali	Darbhanga	Patna	Jamui	Katihar	Purnia
Crop production	18	13	3	74	0	2
Horticulture	0	0	3	57	0	0
Animal husbandry	2	3	3	66	0	0
Aromatic & medicinal plants	9	1	0	12	0	0
Water management	1	3	6	54	0	0
IFS	2	1	10	47	0	0
INM	0	0	1	35	0	0
IPM	5	1	5	39	0	0

Sources of Information

Input dealers and Progressive farmers are the two main sources of information for the farmers of Makhana growing

districts (Zone II and Darbhanga district of Zone I). For farmers of other districts, TV, Radio, Newspaper and Agricultural experts are the main sources of information.

Table 4: Sources of information in different districts (in %)

Sources of Information	Vaishali	Darbhanga	Patna	Jamui	Katihar	Purnia
Television	71	43	27	62	72	62
Radio	65	69	58	97	39	64
Newspaper	72	67	76	74	51	53
Farmers fair/ Exhibitions	54	76	57	86	40	12
Agricultural Experts	55	17	68	82	58	12
Progressive farmers	53	89	47	93	93	98
Input dealers	38	97	25	62	76	100

Training Needs

The major and minor training heads are given in Tables 5 and 6. Improved crop production techniques and Livestock Production and management are the main themes of training needs of farmers of Zone I. In Zone I and III B, Improved crop

production techniques and Vermi-composting are the main training needs, whereas Vermi-composting and Livestock Production and Management are the major training needs of the farmers of Zone III A.

Table 5: District-wise major themes of training needs (%)

Theme areas	Vaishali	Darbhanga	Patna	Jamui	Katihar	Purnia
Improved crop production	25	98	75	77	71	92
Livestock production and management	24	84	74	83	44	76
Horticultural crop production	19	90	0	74	18	54
Soil and fertility management	22	90	32	73	32	57
Irrigation and water management	20	94	29	73	26	47
Vermi-composting	49	95	20	97	27	31
Others	15	75	16	56	25	25

Under Improved crop production techniques, Weed management, Integrated Pest Management and Nursery Management are the specific topics in which the farmers require trainings. Under Livestock Production and Management, Dairy Management is the main topic on which

the farmers require trainings. Water conservation techniques and seed production are the other training needs of the farmers. Majority of the farmers, irrespective of Zones, are of the opinion that 30 - 40 % time of training should be devoted towards field trips/exposure visits.

Table 6: District wise specific training needs (in %)

Topics	Vaishali	Darbhanga	Patna	Jamui	Katihar	Purnia
Weed management	22	98	75	75	71	81
Integrated Pest Management	14	92	68	63	55	92
Nursery management	4	80	56	76	60	54
Seed production	21	54	54	78	54	80
Dairy management	18	31	74	83	44	76
Water conservation techniques	6	94	29	73	12	47
Soil & water testing	9	90	32	72	32	57
Fert. Management of soil	6	84	23	43	19	46
Organic farming	25	85	7	45	22	40
Improved vegetable cultivation	19	90	20	74	14	54

CONCLUSION

Based on above study it was concluded that since input dealers are the main and first-hand information dissemination sources, there is urgent need of training of input dealers on general agricultural aspects like safe use of

pesticides, spraying techniques etc. as they are one of the important sources of information for the farmers. There is urgent need to more time should be given on skilled demonstration, field trips, exposure visits so as to increase adoption of the technology.

REFERENCES

- Bajpai M, Rathore S and Kaur M.2007. Training Needs of Rice Growers: A Case of Uttarakhand. *Indian Res. J. Ext. Edu.* 7 (2&3): 38-40.
- Landge S and Tripathi H. 2006. Training needs of kisanmitras in agriculture and allied Areas. *Indian Res. J. Ext. Edu.* 6 (3): 1-5.
- Rai DP and Singh K. 2008. Awareness, Attitude and Training Needs of Farmers about Recommended Practices in Watershed Development Programme. *Indian Res. J. Ext. Edu.* 8 (2&3): 89-91.
- Rajput HD, Supe SV and Chinchmalatpure UR. 2007. Farmers Training Needs on BT Cotton Technology. *Indian Res. J. Ext.* Edu. 7 (1): 14-16.
- National Commission on Farmers. 2006. Serving farmers and saving farming: Towards faster and more inclusive growth of farmers' welfare. Fifth and Final Report, Ministry of Agriculture, Government of India.
- Salam MA, Anwer ME and Alam MS. 2013. Agriculture and the economy of Bihar: An analysis. *International Journal of Scientific and Research Publications* 3 (11): 1-19.
- Singh SK, Singh KM, Singh RKP, Abhay Kumar and Kumar U. 2014. Impact of Rainfall on Agricultural Production in Bihar: A Zone-Wise Analysis. *Environment & Ecology* 32 (4A): 1571-1576.

Citation:

Kumar A, Singh AK, Kumar U, Singh KM, Singh RKP and Bharati RC.2018.Training needs assessment of farmers of Bihar: A zone wise analysis. *Journal of AgriSesrch* 5(2): 130-133