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Impact Assessment of FLDs on Paddy in North Eastern Himalayan Region

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ABSTRACT

Rice is an important staple food for more than half of the global population. *Krishi Vigyan Kendra* Tawang, conducted demonstrations on paddy from 2011- 14 for improvement of paddy production in Tawang district of Arunachal pradesh. An impact evaluation was based on the comparison of participant and non-participant farmers with reference to increase in knowledge level and adoption of participant farmers of improved practices of paddy production. FLDs were carried out in a systematic manner on farmers fields to show the worth of HYV in comparison to local varieties and there by convincing farmers about potentialities of improved practices. The highest yield12 q/ ha was recorded in the year of 2011-14 in the FLDs, which was 40 per cent more over the farmers practices. The gross returns (₹ 19200/ha) and net returns (₹ 6200/ha) with higher cost benefit ratio 1.5:1 compared to 1.2: 1 of non-participant, FLDs programme to improve overall knowledge and adoption amongst the farmers in the region to boost paddy production.

Key words: Impact assessment, improved practices, participant, paddy, region.

INTRODUCTION

Rice is an important staple food for more than half of the global population. Paddy is cultivated in more than 90 countries; while more than 92 per cent of the rice is produced and consumed in Asian countries. When compared to the other paddy growing countries, India is having the largest area under rice production next to china. The area under paddy in India is around 44 million hectares with an annual production of 90 million tones of rice. Paddy originated in South Asia and was introduced in India centuries ago through Himalayan routes and also brought in by traders of Indonesia. Paddy is an important food crop which ranks first in India. Paddy is basically used in cooking as edible food. In addition, it contains a good amount of minerals, salts and vitamins (thiamine and riboflavin). Area under paddy cultivation in Arunachal Pradesh is 7.65 lacs hectares with the production of 11.18 lacs tones. Paddy is a major *kharif* crop cultivated in Tawang district of Arunachal Pradesh 810 ha. acreage and production of 1271.7 M T (Source: Dist Statistical Handbook, Tawang)

METHODOLOGY

The present study was carried out during 2011-14 by the KVK, Tawang, at farmers'field of four villages, namely, Udung, Yusum, Surbhi, Bonglin, and Soma, in Tawang district of Arunachal Pradesh. An interview schedule was prepared for collection of the data. A sample of 120 respondents was taken comprising 60 participant and 60 non- participant farmers. For selection of participant farmers, a list of farmers where FLDss on Paddy were conducted during 2011-14 was prepared and taking equal representation, twelve participant farmers from each of the selected villages making sixty respondents were selected randomly. For the other half of sample, 60 non-participant farmers were selected randomly from the villages adjacent to KVK. The data were collected through personal interview with the help of pre-structured interview schedule. The data were analyzed using suitable statistical tools.

RESULTS AND DISCUSSION

A comparison of the knowledge and adoption level of participant and non participant farmers was under taken as the FLDs conducted on paddy crop by KVK, Tawang might have improved the knowledge of farmers about paddy production. Therefore, efforts were made to assess the knowledge level of Participant as well as non-Participant farmers regarding improved practices of paddy. Most of the both participant and non participant farmers were adopting of the majority of the components,

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viz land preparation, seed treatment, seed rate, nursery raising and transplanting (Tabel 1), Similar results were also obtained by Padmaiah *et al.,* 2009) . The percentage of adoption of the farmers varied from70.00 to 98.33, while in case of non-participant farmers, the percentage varied from 51.27 to 91.67. The data further revealed that adoption of the participant farmers recommended practices like, soil treatment, use of HYV, application of plant protection measures, weed management, post harvest measure was found to be 21.67, 45.00, 63.33, 65,00 and 68.33 per cent respectively. In case of non-participant farmers recommendation practices like, soil treatment, use of HYV, application of plant protection measures, weed management, post harvest measure was found to be 11.67, 30.00, 33.33, 45.00 and 58.33 percentage, respectively.

Table 1: Impact of Paddy demonstration on the adoption of Improved practices by Participant & Non- Participant

Participant (N=60)					Non Participant(N=60)		
Improved Practices Demonstrated	Technology Adopted	Frequency	Per cent	rank	Frequency	Percent	Rank
Land preparation	Timely land preparation	60	100	I	60	100	I
Use of HYV	Ketaki joha	27	45	X	18	30	X
Seed treatment	Treated seed used	42	70	VI	31	51.67	VII
Soil treatment	Soil treated	13	21.67	XI	7	11.67	XI
Seed rate (40 Kg/ha)	40 kg/ha	53	88.33	IV	40	66.67	III
Nursery raising	Scientific method used	58	96.67	III	34	56.67	V
Transplanting& spacing	20x10	59	98.33	II	55	91.67	II
Application of manures and fertilizer	60 :40:50 NPK	47	78.33	V	33	55.00	VI
Application of Plant protection measures	Insecticide / pesticides used	38	63.33	IX	20	33.33	IX
Weed management	Weedicide used and & one hand weeding	38	65.00	VIII	27	45.00	VIII
Post harvest measure	Harvested at the right time	41	68.33	VII	35	58.33	IV

The participant farmers secured higher gross returns (₹ 19, 200/ha) and net returns (₹ 6,200/ha) with higher cost benefit ratio 1.5:1 as compared to non - participant farmer (Table 2). The similar results were reported by Hiremath and Nagaraju (2009)

Table 2: Cost of cultivation and returns of participant and non-participant farmers

Particular	Participant	Non - Participant
Yield	12 Q/ha	9 Q/ha
Cost of cultivation(₹/ha)	13,000 ₹/ha	11,500 Rs/ha
Gross return(₹/ha)	1600 ₹/qt X 12=19200	1600 ₹/qt X 9.00=14400
Net return(₹/ha)	6200/ha	2900/ha
B:C ratio	1.5:1	1.2:1

Preferential ranking assigned in the descending order to identified problem faced by the farmers in paddy cultivation are presented in Table 3. The awareness and lack of suitable high yielding variety was the very serious constraint which ranked first both by the participant and non-participant farmers. Unavailability of efficient manpower (rank II), Unavailability of disease resistance variety (rank III), Lack of infrastructure (rank IV), Lack of skills for application of insecticide and other(V), In adequate supply of inputs(VI), Low technical knowledge about paddy cultivation (VII), Higher cost of input (VIII) were the constraints of participants while, non participant farmers' constraints in descending order were Lack of skills for application of insecticide and other (II), Unavailability of disease resistance variety (III), Lack of infrastructure (IV), Unavailability of efficient manpower(V), Higher cost of input (VI), Low technical knowledge about paddy cultivation (VII), In adequate supply of inputs (VIII).

Table 3: Distribution of participant and non - participant farmers constraints faced in paddy cultivation

Participant (N=60)				Non- Participant(N=60)		
Constraints	Frequency	Per cent	Rank	Frequency	Per cent	Rank
Low technical knowledge about paddy cultivation	48	80	VII	49	81.67	VII
Lack of infrastructure	52	86.67	IV	53	88.33	IV
Awareness and lack of suitable high yielding variety	60	100	I	60	100	I
Unavailability of disease resistance variety	57	95	III	54	90.00	III
In adequate supply of inputs	49	81.67	VI	47	78.33	VIII
Lack of skills for application of insecticide and other	51	85.00	V	56	93.33	II
Higher cost of input	47	78.33	VIII	50	83.33	VI
Unavailability of efficient manpower	58	96.67	II	52	86.67	V

CONCLUSION

The study concluded that the FLDs conducted in Himalayan region had made an impact on both participant and -non participant farmers. It is clearly shown that the level of adoption of participant farmers regarding improved practices of paddy was higher than non-participant. Lack of awareness and lack of suitable high

yielding variety, unavailability of efficient manpower, unavailability of disease resistance variety and inadequate supply of inputs were the most important constraints, which inhibit the cultivation of paddy. The yield obtained by the participant farmers was higher (12 q/ha) than the non participant farmers (9 q/ha). The participant farmers' yield increased 40 per cent more than the non-participant farmers. There was significant improvement in knowledge and adoption of improved practices among the participant farmers. FLDs played an important role in motivating farmers for adoption of improved agricultural practices.

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