CONSTRAINTS EXPERIENCED BY THE FARMERS IN THE ADOPTION OF IMPROVED PADDY TECHNOLOGY PRODUCTION IN NELLORE DISTRICT, ANDHRA PRADESH

Ms. Sharon Priyanka[1]; Dr. Syed H. Mazhar[2]; Dr. Jahanara[3]

[1]Student, [2]Associate Professor, [3]Professor and HOD of Extension and Communication
Department of Agricultural Extension & Communication
SHUATS, Prayagraj

ABSTRACT: Rice is the staple food crop of India and acts as the key to sustainable food sufficiency. To feed the growing population in India, the productivity of rice should also be increased to ensure food security. Hence, indirectly it revealed thatin order to increase the rice productivity, improved production technologies should be adopted, for which the constraints in adoption should be eliminated. Keeping this in mind, the present study is conducted at Nellore district of Andhra Pradesh, to understand the constraints involved in adoption of improved production technologies in paddy and to provide solution to overcome the constraints.15 farmers from each of the six villages Eguvachavali and Chemmidipalem from Pellakurmandal, Kothavellanti and Sajjapuram from Nellore mandal, Mahalakshmipuram and Nelimatikandriga from Thotapalligudur, constitutes the 90 respondents for the study. The primary data was collected from the farmers with the help of a pre-tested interview schedule through personal interview method. The findings of the study revealed that high cost of labors was the most important constraint faced by the farmers. Hence, Government and voluntary organizations should provide subsidy and to conduct demonstrations among the farmers to promote adoption of improved paddy production technologies.

Keywords: Improved paddy production technologies, Constraints, Nellore, Adoption, Production technologies, Rice production technologies.

INTRODUCTION

Rice is the first cultivated crop in Asia which belongs to Gramineae family and had its centre of origin in India and Burma. Rice is a high carbohydrate food and one of the staple foods of Southeast Asia. FAO (2000) reported that rice serves as the most important food crop for 2.89 billion people in Asia, 40 million in Africa and 1.3 million in America. Worldwide, the rice is grown over an area of 163.46 million hectares with the production of 718.35 million tons and a productivity of 4390 kg/ha. Meanwhile, India is one of the leading producers of rice with an area of 43.97 million hectares with the production of 104.3 million tons and a productivity of 2372 kg/ha (Anonymous, 2014). Rice contributes about 43% to total food grain and 53% to cereal production and acts as a key to sustainable food sufficiency. With reference to the importance of the rice, United Nations designated 2004 as, 'International Year of Rice'.

In India, Uttar Pradesh secured first rank in area and production. Meanwhile, Andhra Pradesh secured third rank with an area of 4.00 million hectares and production of 12.42 million hectares. In Andhra Pradesh, rice is grown under three different ecosystems viz., irrigated ecosystem (50.6%), rainfed low land (43.8%), and rainfed uplands (5.6%) and the irrigation sources were canals (52%), tube-wells (19.31%), tanks (16.2%), other wells (8.8%) and other sources (3.7%). Among the 13 districts of AP, Nellore has the highest rice productivity (4473 kg/ha) followed by East Godavari (4028 kg/ha), West Godavari (3928 kg/ha), Prakasham (3779 kg/ha), Guntur (3468 kg/ha) and the lowest is in Vishakhapatnam (2075 kg/ha).

Nellore is famous for its paddy fields and the name itself indicates 'Nell+Ora' (Nel – Paddy and Ora – Town in Tamil). In Nellore, the rice is grown under 256.1 thousand hectares with the productivity of 4473 kg/hectare. Balachandran pillai (2004) commented the various constraints among farmers in adoption of paddy production technologies. They were inadequate custom hire facilities for farm machinery, lack of credit facilities and high capital cost of implements. Constraints such as small farm size, high costs of operation, non-availability of suitable implements and spare parts, inadequate service and repair facilities, complexity of

machine technology, low profitability of rice cultivation, lack of skilled labourers for operating machines and lack of awareness of the farmers about the modern technologies, opposition from farm labourerspose serious challenges to farmers.

The major constraints experienced by the paddy farmers were high cost of hybrid seed, lack of fund, high cost of implements, lack of training facilities regarding improved rice farming and lack of relevant demonstration (Neshram, 2009). Kumawat (2010) identified that lack of knowledge about disease control measures, lack of knowledge about fungicides, its recommended dosage and method of application, lack to money and unavailabilty of fungicides were the major constraints among farmers in adoption of SRI practice. Meanwhile, Mahatab (2010) found that aerobic rice growers had problems like weed management, lower yield, gap-filling in aerobic-rice, plant protection, non-availability of sowing equipment, water management, poor germination of seeds and micro-deficiency problems. Rajivagandhi (2010) identified high cost of labour as the most important constraint.

Major constraints like non-availability of seed in time, high cost of seed, inability to identify pest and disease, high rate of chemical pesticide and non-availability of dusters and sprayers (More, 2011). Selvakumar (2011) identified high cost of labour, inundation due to floods, complicated practices, lack of communication were the most problematic constraints. Similarly, Mullaivendan (2012) from his study, observed that high cost of labour, non - availability of suitable high -yielding varieties, weak extension activities at village level, high cost of inputs, lack of conviction in the technology as the challenging constraints.

In addition to this,Manikandan (2013) revealed that inadequate power supply, labour scarcity, high cost of labour, pest and disease attack, high cost of inputs, failure of seasonal rainfall as the major constraints. Maheriya (2013) revealed that paddy growers lack knowledge about the recommended dose of fertilizers, control measures of pests and diseases, identification of pest and diseases, recommendation of chemical weed control measures, recommended hills/m^2, recommended spacing as major technological problem in utilization of paddy

production technology. Wadekar (2017) indicated that unavailability of seeds in time, unavailability of fertilizers in time, high cost of pesticides and fungicides and high cost of implements as the major constraints faced by the rice growers.

The suggestive measures given by farmers were remunerative market prices of paddy should be provided, protecting farmers through crop insurance scheme incase of failure of the season, the minimum support price of the paddy should be declared well in advance by the Government, extension systems should be streamlined to disseminate farm technology, proper technical guidance should be given to the farmers as and when they need, training on new cultivation technology should be imparted to the farmer, farm information centers should be established at village level, farm consultancy services should be made available to the farmers at village level, required farm inputs should be made available at village level, timely supply of canal water and electricity should be supplied regularly (Parmar (2006), Patel (2006), Shivamurthy (2008), Bhosale (2010), Jayasankar and Thiyagarajan (2010), Maheriya (2013)).

Statement of the Problem

India has the second highest population in the world. To feed the growing population of the India and to ensure food security, increasing the total area under paddy crops and improving the per hectare productivity of paddy crop paves the way to increase agricultural production. In order to improve the productivity of the rice, the constraints faced by the farmers should be eliminated. Hence, a detailed study on the constraints experienced by the farmers in the adoption of the technology and practices in paddy cultivation could be understood and solutions can be brought to promote rice cultivation. In the light of the context, the objectives were formulated and they were

1. To identify the constraints faced by the respondents in the adoption of improved paddy technology production

2. To provide suggestion for better adaption of improved paddy technology production.

METHODOLOGY

Nellore district was purposively selected as it is one of the important districts of Andhra Pradesh in cultivation of rice-based cropping systems. Out of 46 mandals, three mandals namely Nellore (rural), Thotapalligudur, Pellakur were selected purposively. From each mandal, two villages were selected, as a total of six villages from three mandals were selected namely Eguvachavali and Chemmidipalem from Pellakurmandal, Kothavellanti and Sajjapuram from Nellore mandal, Mahalakshmipuram and Nelimatikandriga from Thotapalligudur. Twenty farmers from each village, 40 farmers from each mandal; thus, a total of 120 farmers were selected as respondents. The primary data was gathered from the paddy growers with the help of a structured interview schedule through personal interview method and the secondary data was gathered from District Statistical Office of Nellore.

RESULTS AND DISCUSSION

The constraints experienced by the farmers in adoption of improved paddy production technology was studied under four different categories, viz., bio-physical constraints, technological constraints, socio-economic constraints and institutional constraints. The farmers response against each constraint was recorded, tabulated and analyzed. The results were presented in table 1.

Table.1. Constraints experienced by the farmers in adoption of improved paddy production technology

(n=120)*

S. No.	Constraints	No.of farmers	Percent (in %)	Rank
I	**Bio-physical constraints**			
1	Non-availability of suitable high-yielding varieties	73	81.1	III
2	High cost of yielding varieties seed	85	94.4	I
3	Complexity of new practices	79	87.78	II

4	Occurrence of heavy weed growth	51	56.67	V
5	Heavy pest and disease incidence	62	68.89	IV
II	**Socio-economic constraints**			
1	High cost of inputs	79	87.78	II
2	High cost of labour	85	94.4	I
3	Non-availability of trained labour in time	72	80	III
4	Non-availability of credit facilities	62	68.89	V
5	Lack of subsidy for inputs	69	76.67	IV
6	Lack of reasonable support price	56	62.22	VI
III	**Technological constraints**			
1	Lack of awareness or knowledge about certain technologies	64	71.11	II
2	Lack of conviction on the new technology	69	76.67	I
3	Non-availability of desire technology	38	42.22	V
4	Lack of skill in seed treatment	46	51.11	III
5	Lack of technical advice for seed storage	43	47.78	IV
IV	**Institutional constraints**			
1	Weak extension activities at village level	79	87.78	II
2	Unaware of supplies and services offered by the government	83	92.22	I
3	Insufficient training programme	75	83.33	III
4	Lak of proper communication system	72	80	IV
5	Lack of transport facilities	59	65.56	V
6	Lack of regulated market	27	30	VI

From table.1, it can be seen that regarding the bio-physical constraints, high cost of yielding varieties seed (94.4%) secured 1st rank, followed by complexity of new practices (87.78%), non-availability of suitable high-yielding varieties (81.1%), heavy pest and diseases (68.89%) and occurrence of heavy weed growth (56.67%) secured 2nd, 3rd, 4th and 5th ranks respectively. With respect to socio-economic constraints, high cost of labour (94.4%) secured first rank, followed by high cost of inputs (87.78%), non-availability of trained labor in time

(80%), lack of subsidy for inputs (76.67%), non-availability of credit-facilities (68.89%) and lack of reasonable support price (62.22%) secured 2nd, 3rd, 4th, 5th and 6th rank respectively.

According to technological constraints, lack of conviction on the new technology (76.67%), lack of awareness or knowledge about certain technologies (71.11%), lack of skill in seed treatment (51.11%), lack of technical advice for seed storage (47.78%) and non-availability of desired technology (42.22%) secured 2nd, 3rd, 4th and 5th ranks respectively. In the light of institutional constraints, unaware of supplies and services offered by the government (92.22%) secured first rank, weak extension activities at village level (87.78%), insufficient training programme (83.38%), lack of proper communication system (80%), lack of transport facilities (65.56%) and lack of regulated market (30%) secured 2nd, 3rd, 4h, 5th and 6th ranks respectively.

Unaware of the government schemes and policies regarding subsidy, low level of education, less extension agency contact, less mass media exposure pose serious challenges to farmers in adoption of improved paddy production technologies. The findings of the study are in line with the findings of the Balachandran Pillai (2004), Rajivgandhi (2010), Oinam (2011), Selvakumar (2011), Mullaivendan (2012), Manikandan (2013), Matto (2017).

CONCLUSION

From the study, it could be understood that, high cost of yielding varieties seed, high cost of labour, lack of conviction on the new technology and unaware of supplies and services offered by the Government were the major constraints experienced among the farmers of Nellore Hence, Government and voluntary organization should organize method demonstration and result demonstration in farmers premises with less popular practices, to show worthiness of various practices and thereby to reduce their constraints.

REFERENCES

[1]. Balachandran Pillai. G. 2004. *Constraints on Diffusion and Adoption of Agro-mechanical Technology in Rice Cultivation in Kerala*. Discussion Paper No. 59. Kerala Research Programme on Local Level Development Centre for Development Studies Thiruvananthapuram.

[2]. Bhosale, U.S. (2010). Participation of rural youth in paddy farming in Anand district of Gujarat state. M. Sc. (Agri.) Thesis, AAU, Anand (Gujarat). (Unpublished).

[3]. FAO (2000) – The State of Food Security and Nutrition in the World http://www.fao.org/3/ca9692en/CA9692EN.pdf

[4]. Jayasankar, R., &Thiyagarajan, S. (2010). Constraints experienced by the rice farmers in adopting recommended biofertilizer practices. *International Journal of Current Research*, 7, 018-020

[5]. Kumawat, A. (2010). *A study on adoption behaviour of farmers in system of rice intensification (SRI) practices of paddy cultivation in plain area of suhagpur block of shahdol district of Madhya Pradesh* (Doctoral dissertation, jnkvv, jabalpur).

[6]. Mahatab Ali, K. M. (2010). *A Study on Knowledge, Adoption of aerobic rice growers in Eastern Dry Zone of Karnataka State* (Doctoral dissertation, University Of Agricultural Sciences Gkvk, Bengaluru).

[7]. Maheriya, H.N. (2013). Technology utilization behaviour of paddy growers in Anand district of Gujarat State. M.Sc. (Ag.) Thesis, Anand Agricultural University, Anand, Gujarat (India).

[8]. Manikandan, J. 2013. Learning experience and extent of adoption of paddy farmers in Ariyalore district. Unpublished thesis. M.Sc. (Ag)., Annamalai University, Annamalai Nagar.

[9]. Matto, J. M., Dar, M. A., Shah, Z. A., Beigh, M. A., & Mir, R. (2017). Constraints Faced by the Paddy Growers in Adoption of Recommended Paddy Production Practices in Budgam District of Kashmir. *International Journal of Current Microbiology and Applied Sciences*, 6, 1206-1214.

[10]. Mullaivendan, S. 2012. A Study on Yield Gap and Constraints to High Yields in Rice at Farm level in Sirkali Taluk, Nagapattinam district.Unpublished thesis. M.Sc. (Ag)., Annamalai University, Annamalai Nagar.

[11]. More, S. V. (2011). *Factors influencing adoption of hybrid rice cultivation technology in Ratnagiri district*. M.Sc. (Agri.) Thesis, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli (M.S.). Neshram, N. 2009. *A Study on Adoption of Rice Production Technology by the Farmers of Waraseoni Block of Balaghat District (MP)* (Doctoral dissertation, jnkvv, jabalpur).

[12]. Oinam, T and Sudhakar, B. 2014. Constraints Facedby the Famers in Adoption of Improved paddy practices in Bishnupur district of Manipur state. International Journal of Economic and Business Review. Vol 2(7). 32-37.

[13]. Parmar, P. B. (2006). *A Study On Knowledge And Extent Of Adoption Of Recommended Paddy Production Technology By The Paddy Growers In Khambhat Taluka Of Anand District* (Doctoral dissertation, Anand Agricultural University, Anand).

[14]. Patel, D. F. (2006). *A study on Attitude of the paddy growers towards the use of pesticides in Tarapur, Sojitra and Petlad talukas of Anand district* (Doctoral dissertation, Anand Agricultural University, Anand).

[15]. Pillai, G. B. (2004). *Constraints on Diffusion and Adoption of Agro-mechanical Technology in Rice Cultivation in Kerala.* Kerala Research Programme on Local Level Development, Centre for Development Studies.

[16]. Rajivgandhi, A. 2010. Yield Gap Analysis in Paddy among the Farmers of Cuddalore district. Unpublished thesis. M.Sc. (Ag)., Annamalai University, AnnamalaiNagar.

[17]. Selvakumar, V. 2011. A study on Adoption of System of Rice Intensification (SRI) of TirunavidaimaruthamTaluk in Tagore district.Unpublished thesis. M.Sc. (Ag)., Annamalai University, Annamalai Nagar.

[18]. Shivamurthy, M. L. R., Rao, S. H., & MT, L. (2008). Constraints of Farmers Cultivating Rainfed Paddy in Eastern Dry Zone of Karnataka. *Mysore-Journal-of-Agricultural-Sciences*, *42*(1), 163-165.

[19]. Subhash, B. U. *Participation Of Rural Youth In Paddy Farming In Anand District Of Gujarat State* (Doctoral dissertation, Anand Agricultural University, Anand).

[20]. Wadekar, R. P. (2017). Adoption Level of Selected Agricultural Technologies of Rice Crop by Warli Tribal Farmers. *International Journal of Agriculture Sciences, ISSN*, 0975-3710.Maheriya (2013) in his study on Technology utilization behavior of paddy growers in the Annand district of Gujarat state