The Pharma Innovation Journal 2021; SP-10(9): 34-36

www.ThePharmaJournal.com

The Pharma Innovation

ISSN (E): 2277- 7695
ISSN (P): 2349-8242
NAAS Rating: 5.23
TPI 2021; SP-10(9): 34-36

www.thepharmajournal.com
Received: 25-07-2021
Accepted: 27-08-2021

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A study on various constraints perceived by the farmers in adoption of BGREI interventions

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DOI: https://doi.org/10.22271/tpi.2021.v10.i9Sa.7591

Abstract
The present study on BGREI (Bringing Green Revolution to Eastern India) Programme was conducted to find out the various constraints faced by the farmers which inhibit and influence acceptance and adoption of BGREI interventions. There was a need for a second green revolution to feed the growing population as the country will have to increase its agricultural output. It is also important to mention that the first green revolution was limited to five crops with the main focus on wheat and was only limited to a few areas of the country, mainly Punjab, Haryana and western Uttar Pradesh. Studies have revealed that the cost intensive first green revolution helped mainly the rich farmers while the small and marginal farmers did not receive the desired benefits and their conditions showed a decline. The emergence of BGREI is to boost food production in eastern part of India that largely remained untouched in 1st green revolution that converted the north-west into a 'grain bowl'. BGREI is a flagship programme under Rashtriya Krishi Vikas Yojana (RKVY). The problem in agricultural development is not the availability of improved agricultural technologies, but converting them into production accomplishments is the need of the hour. Like any other programme, BGREI is associated with a number of constraints at different levels. Here the investigator has tried to find out constraints perceived by the farmers in adoption of BGREI programme and suggestions to overcome it. This finding may go a long way in helping the researchers, planners, policy makers and implementing agencies in their future work.

Keywords: constraints, adoption, interventions, technologies, accomplishments

Introduction
BGREI (Bringing Green Revolution to Eastern India) Programme was intended to address the underlying constraints for enhancing production and productivity of rice in Eastern India. To extend the benefit of first green revolution (1966-67) and to reduce the yield gap Bringing Green Revolution in Eastern India programme was launched under RKVY (Rashtriya Krishi Vikas Yojana) in 2010-11 comprising seven states namely Bihar, Eastern UP, Jharkhand, Odisha, Assam, Chhatisgarh and West Bengal. The present study was conducted during 2020-21 in two blocks namely Jamankira and Jujomura in Sambalpur district of Odisha to find out the constraints perceived by the farmers in adoption of BGREI interventions. During 2012-13 and 2013-14, the BGREI programme was extended to 22 districts of Odisha and National Rice Research Institute (previously CRRI), Cuttack, Odisha is the nodal agency to guide, supervise, monitor and supervise technical interventions. BGREI consists of the following interventions such as (i) Block demonstration (ii) Asset building (iii) Site specific activities (iv) Marketing support including post-harvest management (v) Seed production and distribution (vi) Subsidy on need based inputs (vii) Training programme on cropping system based demonstration etc.

Materials and Methods
Sambalpur district in Odisha is one of the agricultural potential district of Odisha. BGREI programme has been running in Sambalpur district successfully since 2013-14. A sample of 300 farmers (150 BGREI beneficiaries and 150 non beneficiaries) from 8 villages of 4 gram panchayats under Jamankira and Jujomura block of Sambalpur were selected through Stratified Proportionate Random sampling method. The data was collected personally through a semi structural interview schedule pre-tested earlier. Out of total 9 blocks of Sambalpur district, 2 blocks implemented with BGREI were selected randomly in consultation with Krishi Vigyan Kendra (KVK) scientists and district agriculture officers for the study.

Result and Discussion

The data were collected through the interview schedule on the basis of objectives of the study. The data collected were classified, tabulated, analyzed, presented, interpreted and discussed systematically.

(a) Social constraints

BGREI farmers often face problems with social barriers. This in turn affects the adoption of technology. Therefore, social constraints faced by BGREI farmers are analysed and presented in table 1.

Table 1: Social constraints (N=150)

Sl. No	Constraint Statement	Percent	Garrett table value	Garrett mean score	Rank Order
1	People are not properly using the technology under BGREI	12.5	69	45.82	III
2	Lack of social motivation for adopting BGREI programme	37.5	56	50.13	II
3	Social conflict and non-co operation among BGREI farmers	62.5	44	45.31	IV
4	Illiteracy	87.5	27	54.69	I

From the table 1, it was observed that illiteracy, lack of social motivation for adopting BGREI programme and people not properly using BGREI technology were the major social constraints faced by the respondents with Garrett mean score of 54.69, 50.13 and 45.82 ranked I, II and III respectively. The study therefore, suggested that extension functionaries should make house to house visit and go for awareness campaign about BGREI for better adoption. Training programmes should be organized to enrich knowledge and modern skill to farmers. Apart from this line department officials should conduct demonstration programmes to sensitize the farmers to properly implement the technologies under BGREI.

(b) Technological constraints

Adoption of BGREI technology requires a detailed knowledge about the various practices involved in sowing, nursery management, disease pest management etc. Lack of knowledge about technical know-how, complexity of the technology, lack of quality inputs locally, sometimes limit its adoption by the end users. Attempts were made to record the technological constraints faced by the BGREI farmers which were analysed and presented in table 2.

Table 2: Technological Constraints (N=150)

Sl. No	Constraint Statement	Percent	Garrett table value	Garrett mean score	Rank Order
1	Non-availability of timely information	6.25	80	48.23	VI
2	Complex technologies	18.75	67	52.03	V
3	Knowledge imparted not for immediate use	31.25	60	53.55	IV
4	Non availability of media in village	43.75	53	44.43	VIII
5	Quality inputs not availed locally	56.25	47	55.19	I
6	Lack of knowledge- how to do-how technology	68.75	40	53.93	II
7	Difficulties in understanding of technical language	81.25	32	47.85	VII
8	Lack of post harvest and value addition technology	93.75	20	53.93	III

A look into the table 2 revealed that non availability of quality inputs locally, lack of knowledge about technical know-how were common technological constraint encountered by respondents followed by lack of post-harvest and value addition technology with Garrett mean score of 55.19, 53.93 and 53.93 ranked I, II and III respectively. The findings therefore, suggested that efforts by line department staffs for providing sufficient operational procedures for handling implements along with practical knowledge about post harvest and value addition technology must be focused. Extension functionaries under Krishi Vigyan Kendra must conduct training programmes and the success stories should be communicated to the BGREI farmers through different media.

(C) Organizational Constraints

It is the extension system which employs a number of methods and techniques for effective dissemination of the technology at various levels with the ultimate aim of its adoption. Therefore, information were collected to assess the extension constraints faced by the respondents which were analysed and presented in table 3.

Table 3: Organizational Constraints (n=150)

Sl. No	Constraint Statement	Percent	Garrett table value	Garrett mean score	Rank Order
1	Lack of awareness programme for BGREI among farmers	12.5	69	50.76	IV
2	Mandis are located at a large distance from farmer's field	37.5	56	55.45	I
3	Extension contact agencies are located at larger distance	62.5	44	54.94	II
4	Small enterprise on rice are not available	87.5	27	52.66	III

The Table 3 indicated that large distance of mandi from farmer' field, large distance of extension contact agencies, non availability of small enterprise on rice were most common organizational constraints as perceived by majority respondents and ranked 'I, II and III respectively ' with a Garrett mean score of 55.45, 54.94 and 52.66. It was suggested from the findings that provision of mandis facility in nearby area, establishing small enterprise on rice and providing extension facilities and fulfilling training need of farmers extension organization, particularly Krishi Vigyan Kendras, ATMA (Agricultural Technology Management Agency) and the State Department of Agriculture.

(d) Economic constraints

Finance is the most important factor which eases the adoption of different new technologies. Therefore, an attempt was made to analyze the financial constraints of the BGREI farmers.

Table 4: Economic Constraints (n=150)

Sl. No	Constraint Statement	Percent	Garrett table value	Garrett mean score	Rank Order
1	Frequent repair and maintenance cost of implements used in farming	10	75	47.59	II
2	Lack of access to loan at right time	50	50	49.37	I
3	Lack of Govt. subsidi	30	60	43.67	IV
4	Seeds, fertilizers and pesticides are purchased in a price more than its actual price	70	40	47.21	III
5	Less profit than investment	90	25	42.65	V

The table 4 indicated that lack of access to loan at right time was the most important constraint faced by the BGREI farmers followed by frequent repair and maintenance cost of implements used in farming and Seeds, fertilizers and pesticides are purchased in a price more than its actual price were ranked I,II and III respectively with Garrett mean score 49.37, 47.59 and 47.21. The study therefore, suggested that the complicated procedure for getting bank loan should be made simpler and easier and recovery procedure should be modified. The government should plan the BGREI scheme for insurance in implements and exert pressure on banks to supply suitable credit facility at the time of need. Apart from this Govt. should take action on private agencies on selling seeds, fertilizers more than its actual price. The BGREI farmers should be provided with adequate credit at the time of need to overcome the financial constraints in management of farming under BGREI.

Conclusion

It may be concluded that the major constraints were illiteracy, lack of social motivation, lack of technical know-how, non availability of quality inputs locally, distance of mandi from farmers' field, lack of access to credit facility at right time etc. To overcome these problems, different extension activities like kisan mela, exhibition, training, field trip, technology demonstration programmes etc. should be conducted in village at proper time and extension agency should provide right information at right time.

Acknowledgements

I am sincerely thankful to the following for their valuable research support: Dr. B.P. Mohapatra, Dr. S.P. Sangramsingh, Dr. B.P. Mishra, Dr. P.K. Banerjee, Dr. R.S.Panigrahi and also to Department of Extension Education, Odisha University of Agriculture and Technology, Krishi Vigyan Kendra, Sambalpur, Chief District Agriculture Office, Sambalpur.

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