

INDIA RICECHECK PROGRAM: A NEW EXTENSION METHOD IN MAKING?



While everyone would like to see impact of new technologies at a wider scale, very few appreciate the need for adapting new technologies to meet the varied requirements of different socio-economic, bio-physical, organisational and institutional settings. The Ricecheck programme, which follows a procedure of extensionist-assisted farmer – group’s self- learning tries to address these concerns. Dr Shaik N Meera, Noel Magor, John Lacy and V. Ravindra Babu share their experiences here.

PROLOGUE

My (Shaik N Meera) recent visit to New South Wales Australia, focused on understanding the concepts and operational issues in implementing *Ricecheck* program. Even though it appears not to be anything new for extension professionals, I feel the way ‘concepts’ are operationalized is worth learning. Being participatory and linking inputs to outputs and outcomes, is the best part of this. All this is done by farmers (we only facilitate), no top down recommendations from R&D organisations and it is a typical output oriented than a process oriented approach – best suited for commodity based extension efforts. While implementing this in Andhra Pradesh, India during 2013, a question came to my mind as when was the last time did we (extension professionals) operationalize/ facilitate basic extension methods (such as group discussions) involving farmers? This blog is an attempt to answer this question.

INTRODUCTION

Given the highly diverse and dynamic nature of rice farming in India, the AICRIP (All India Coordinated Rice Improvement Project) conducts multi-location trials and recommends location specific varieties/ hybrids and technologies. What is practical and profitable for farmers at any given site depends on the unique combination of bio-physical, socio-economic, organizational and institutional circumstances. As a consequence, it is almost impossible for researchers to develop standard technologies that can be adopted on a large scale and can easily be replicated in different contexts. To address this problem, a participatory approach is proposed keeping in view the diversity of location specific conditions, with farmer experimentation, discussions, experiences, standardizing and adaptation of technologies.



One of the Group Meetings and Follow up Field Visit in New South Wales

This approach has been proven effective in Australia, Philippines, Chile, Brazil etc. There are 4 key principles and few checks for the '*Ricecheck*' programme. In India, Directorate of Rice Research (DRR) under the Indian Council of Agricultural Research (ICAR) has initiated this programme in West Godavari district of Andhra Pradesh in collaboration with the Andhra Pradesh Rice Research Institute, Maruteru (Acharya NG Ranga Agricultural University, Andhra Pradesh) and the International Rice Research Institute (IRRI), Philippines. For the Rabi 2014, this approach is being piloted in Telangana, Tamil Nadu and Odisha states of India.

Box 1: WHAT IS RICECHECK PROGRAM?

Ricecheck is an innovative farmer participatory extension methodology where farmers decide - what are the best practices for their fields based on the 'experience' rather than on 'recommendations' from experts. The core activity under this approach is facilitating group discussions among farmers. *Ricecheck* is a procedure of *extensionist-assisted farmer-group self learning*. It can be defined as a dynamic rice crop management system that presents key technology and management best practice as key checks; checks farmer practices with best practice to compare results and learns through farmer group discussion to sustain improvements in productivity, profitability, and environment safety. In other words, *Ricecheck* is learning by checking and sharing for best farming practice.

Ricecheck program benchmarks farmers' fields to identify practices (checks) for lifting yields and profits. Here comparison is made with best yielding farms rather than with the experimental plots (at research stations). In *Ricecheck* programme, every farmer feels that all the key checks and practices are interrelated. Its holistic many factors affect crop yields and hence farmers need to understand the relation between each practice with the output (may be number of tillers) and with the outcome (may be yield).

So, What's new in this?

In this program, the top yielding practices (checks) are identified by groups of farmers from their own crops and not top down from experimental fields. The researchers and extension officers will facilitate the process. These checks are listed simply and objectively. Once identified, we encourage farmers to adopt these checks in their respective fields. On weekly basis, group discussions are held (facilitated by extension officer/ scientists) to know how each practice is implemented and each check is achieved. On weekly basis, crop monitoring and recording practices are maintained. With this, farmers will get opportunity to understand how their practices are differing from neighbouring (best farmers) practices.

HOW RICECHECK PROGRAM IS IMPLEMENTED?

- Firstly, groups of 15-20 farmers are formed. This will be followed by a facilitated discussion on practices that contribute to higher yields and will also be supplemented by scientific practices wherever required. At the end of this exercise, we will have 'standard rice practices' for that village/ region identified by the farmers rather than by the scientific community.
- These practices are then categorized into 10-15 key checks. If we achieve these 'key checks' it is likely that productivity will go up. The assumption here is that without 'recommending good agricultural practices' to the farmers, they 'adopt what is good for them' in a participatory way.
- We know that in the same village while few farmers achieve 6-8 t/ha, many get only 2-3t/ha or below. Why is this happening? What practices are contributing to higher productivity? What practices are detrimental to achieve higher productivity? By bringing all these farmers together and facilitating sharing of their experiences help in setting a benchmark of 6-8 t/ha for all the farmers. The process of achieving this will then be monitored.
- Essentially, it is important to identify the key actors/ organizations that will facilitate the process. During the season in a sequential manner, best practices (contributing to achieve key checks) are discussed among farmers on monthly/ fortnightly basis. Next week, when farmers meet together, they would discuss what were 'actually practiced in their field' and why few couldn't be followed? All these are documented in records/ matrix sheets.
- At the end of the season, we will have a matrix of all the farmers - how many key checks are achieved by each and how each key check has contributed to higher yields.
- Over the next few seasons key checks and practices are standardised for that village/cluster of villages and with all the farmers starting to adopt standard practices hence, higher productivity is achieved.

EXPERIENCES IN ANDHRA PRADESH: WORK IN PROGRESS

We have selected West Godavari district of Andhra Pradesh as it is one of the districts where rice farmers have rich experience of farming. The *Ricecheck* components have been customized and standardized to suit the Indian context. A total of four discussion groups (involving 80 farmers) were established and 4 group meetings were organized during the dry season 2013-14. In the first meeting, key factors (total of 45 checks) contributing to the productivity were identified through facilitated discussions. During season long group meetings, all these key checks and their level of adoption among farmers were documented. The extent of deviation from the mutually agreed key checks was also recorded. The field level constraints in adopting all the key checks were documented and were communicated to R&D organizations as feedback.

Results related to 2 groups (40 farmers) are provided here. About 45 Checks and 15 key checks which were contributing to the higher yields in that region were identified. The adoption level among farmers were documented and analyzed. Field level constraints in adopting the key checks were documented and communicated to the R&D organizations at the end of the season.

Box 2: *Ricecheck* components deployed/piloted

- Recommendations booklet/knowledge source Rice Knowledge Management Portal (RKMP)
- Packaging key technologies as key checks
- Farmer discussion groups
- Crop checking and crop records
- *Ricecheck* database – inputs, results, benchmarking reports
- *Ricecheck* results used to update checks each season

Key Checks Identified

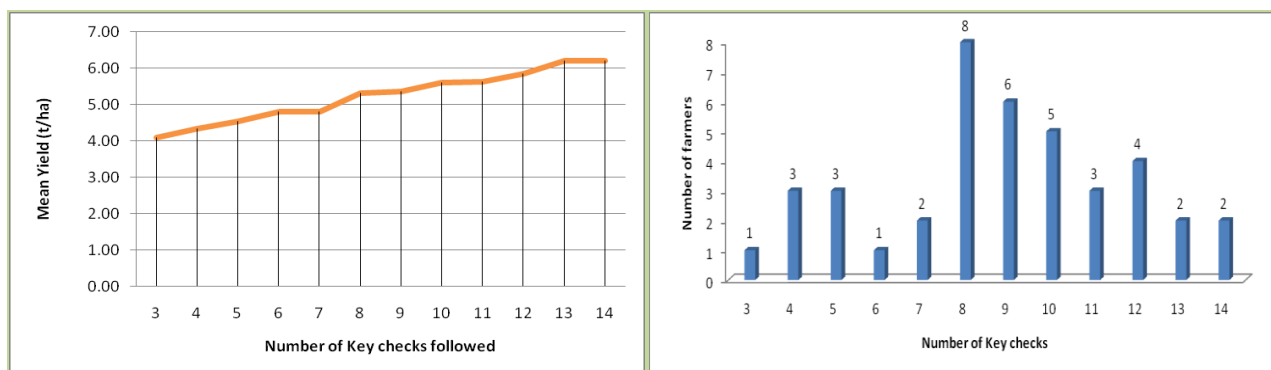
Farmers Discussion groups are key to the *Ricecheck* program. In the first meeting, two groups were involved in identifying what were the best suited checks for their village. Their ideas were collated and each of the practices for each technology was read back to the farmers. Farmers were asked to add any missed technologies, practices or to clarify practices. The practices are not to be debated by researchers present and if some practices are believed as incorrect, there is an opportunity to clarify it in the draft recommendations. Finally, the following key checks were identified by the groups (Box 3).

Box 3: The key checks

1. Use high yielding varieties that is recommended for the growing conditions of your location and season
2. Use high quality seeds from a reliable source (preferably commercial source)
3. Apply a seed treatment against fungal diseases
4. Prepare a well levelled field through shallow puddling that is weed free and with clean bunds
5. Establish your nursery on time
6. Manage your nursery to obtain healthy seedlings
7. Maintain water levels using 5-2-5 Principle (5cm- 2cm-5 cm)
8. Appropriate seedling age to be followed (21 days)
9. Plant in lines and achieve a plant stand of hills per square meter
10. Apply organic fertilizers and complex as well phosphorus and potassium fertilizers with the last puddling
11. Apply top dressed nitrogen in splits and drain field before application
12. Correct micronutrient deficiencies
13. Control weeds soon after transplanting
14. Regularly monitor your fields for pests and use only approved and appropriate control agents at recommended doses
15. Drain the field before harvest and harvest when it is completely dry

During the entire season, a series of group meetings were organised with an interval of 30 days. These meetings were aimed at promoting the key checks & practices to be undertaken during the subsequent

month. Previous month's adoption level from each farmer was recorded during the meeting. Level of achievement in terms of adoption and constraints in adoption of checks were analysed. The preliminary results are provided below:



Yield range (in t/ha)	Number n=40	%	Range of Key checks
4.1-5.0	9	22.5	3 to 7
5.1-6.0	28	70	8 to 12
Above 6.0	3	7.5	13 to 14

*Pearson Correlation between yield and number of key checks followed = .957 (Significant at the 0.01 level 2-tailed)

Synthesis and Application

- A serious recognition is being given to farmer experimentation in this approach in contrast to the older agricultural extension approaches based on the idea of 'information' as a commodity to be exchanged.
- A desire to document - to 'know things' in ways capable of sustaining discussion (instead of filling boxes in reports) and initiating interventions is a key component here. This will in turn lead to the establishment of an emancipatory learning environment.
- At the micro level, this approach contributed to 56% increase in rice yields on an average.
- The *Ricecheck* package –simple key checks, recommendations, groups, crop checking, records, database, feedback to farmers and a range of delivery methods are all important
- Discussion groups are still the key to learning and continuous improvement
- *Ricecheck* as a participatory extension approach is successful in improving the farm productivity. However, while planning to implement such approach, customisation of the processes is required to suit local conditions.

KEY INSIGHTS FOR EXTENSION

Learning is Important

Though the *Ricecheck* System helps farmers achieve high yield through proper crop management, its major highlight is the learning process. The learning process takes place before, during, and after each planting season. Farmers can compare their actual performance and management with the expected outputs (yield, quality, and environmental) and outcomes as indicated by the achieved key checks. Due to limited resources or for other reasons if farmers haven't adopted the key recommendations, these problems can be identified and therefore, improvements in the next season can be made.

Facilitating Group Discussions

The extension officer, agronomist or village leader can lead the groups. Group learning is preferred to individual farm visits or field days as farmers can interact, communicate and learn from each other. The farmer groups are the ideal medium for communicating and training farmers.

Box 4: Using the learning steps

The most important feature of *Ricecheck* is to encourage farmers to monitor and check their crops to see if they are adopting the checks. This is achieved through a number of learning steps (Lacy 1994). These are:

- Observing the crop and measuring growth and management performance
- Recording measurements and interpreting and comparing results and
- Acting to overcome weaknesses in management (non adopted checks)

The aim is to educate farmers to improve their learning and performance at each step as well as moving from step to step over time. The aim is to encourage as many farmers as possible to progress through all the steps.

Field days have a different role. They are appropriate for researchers to create awareness about new technology and are able to cater to large number of farmers. It is a top down approach with researchers showing results and inviting questions from farmers. It is not usually a forum to allow discussion of the merits of the technology because there are too many farmers present. Farmer groups can be used for this. Individual farm visit is another alternative form of communication but considering the very small number of extension officers and agronomists (in relation to farmers) its scope is limited.



Glimpses of Ricecheck Group meetings in Andhra Pradesh

Box 5: Discussion group formation

Groups should be based on localities and communities where farmers know each other. The farmer and farm chosen for the group meetings should be respected by the other farmers and keen to hold the meetings. The host farmer, extension officer, agronomist or village leader organising and facilitating the meetings need to fix convenient meeting times at important decision times (eg: first topdressing etc). It is important to set up a communication system so that all farmers are invited to the meeting. The training in *Ricecheck* provides a reason and focus for attending the group meetings and becoming a group member. Not all invitees will attend or wish to remain in the group as the learning style will not suit some farmers.

Group leader skills

Group leaders have to be motivated, technically competent and should have good communication skills. The ideal group size is 10-15 farmers as this allows all farmers to speak and participate.

The leader needs to encourage farmers to make comments and promote discussion. Important issues that require that answers might be recorded on a piece of paper. The leader should ensure that the answers to these questions are presented at the next group meeting.

As adults (farmers) have preferred learning styles there is a need to use a number of learning activities at group meetings. Some adults learn best from observing (for instance, posters, others by measuring- “doing” (eg; the transplanting check 25cm x 25cm spacing). Some prefer writing and for instance, the recording of rice practices suits these learners. Some learn best from talking (whereas sometimes talkers can create issues by talking too much) while some do not say much because they are “listeners”. Others like comparing rice crops or demonstration plots or reading (eg: *Ricecheck* fact sheets and records). Some learners prefer interpreting information (eg; drawing conclusions from records). In other words, use of a range of learning styles ensure farmers engagement and learning and this will boost up attendance at the next meeting



Crop data analysis

The *Ricecheck* crop evaluation report provides feedback to each participating farmer showing how their crop practices compare to the *Ricecheck* key checks, other farmers and to high yields. Adoption of the checks is automatically evaluated. Poorly adopted recommendations or checks can be quickly identified and communicated to extension, research and other stakeholders. The database has the ability to compare any of the crop parameters with yield and produce graphs of the results. Use of graphs at farmer meetings is an excellent tool for promoting discussion and farmer learning and motivating farmers to improve practices. A simple matrix can also help farmers to understand the relations between various checks and productivity.

EPILOGUE

Ricecheck provides the framework for collaboration between farmers, research and extension. It recognises farmer learning and values farmers’ knowledge as important as that of research and extension. As an extension method it is bottom-up, small group driven and requires superior facilitation skills.

This program can be initiated with a core group of farmers in a number of districts/regions in different States with whom extension workers and researchers interact regularly. Current management practices and knowledge gaps among farmers will be assessed in a participatory and interactive process and these form the basis upon which the program will be built. This knowledge base will provide opportunities for extension agents and researchers to collaborate with the farmers to enhance their knowledge base. This will in turn motivate them to learn and further improve practices to achieve better productivity.

CONCLUSION

While everyone would like to see impact of new technologies at a wider scale, very few appreciate the need for adapting new technologies to meet the varied requirements of different socio-economic, bio-physical, organisational and institutional settings. The *Ricecheck* programme, which follows a procedure of *extensionist-assisted farmer –group’s self- learning* tries to address these concerns. In other words, we are using *Ricecheck* as a case to illustrate the importance of adopting such innovative approaches (or) beyond field days and demonstrations.

During the last couple of years, ICAR has re-invented the concept of 'Farmer First'. This concept recognises the complex, diverse and risk prone realities of the majority of Indian farmers and calls for enhancing farmer-scientists contacts with multi stakeholder participation. While theoretically this concept may sound good, but what is lacking is operationalising such concepts in the field conditions. We as extension professionals need to develop a series of 'toolkits' (expand the number of options in our extension tool box) to make little changes in the way extension is carried out in India and elsewhere.

Reference

Lacy, J 1994. Ricecheck-A Collaborative Learning Approach for Increasing Productivity. In: Proceedings of the Temperate Rice Conference: 21-24 Feb.1994: Leeton, New South Wales Australia, pp247-254

Singh R, John B and Lacy J. Economic assessment of partial adoption of extension programs: the case of the Ricecheck program in Australia. Extension Farming Systems Journal volume 3 number 1.
(http://www.csu.edu.au/_data/assets/pdf_file/0003/109551/EFS_Journal_v03_n01_01_Singh_et_al.pdf)

J. Lacy, W. Clampett and J. Nagy. 2000. Bridging the Rice Yield Gap in Australia.
<http://www.fao.org/docrep/003/X6905e/x6905e06.htm>

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