



A Comprehensive Strategy for Popularization of the Documented Farmer Innovations and Re-Inventions

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Author's contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

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ABSTRACT

Farmer innovations and re-inventions is a subject that is increasingly making people sit up and think. At the very least it underpins a refreshing new approach to indigenous environmental knowledge that goes further than just passive admiration. At the most it is a potentially important new direction for research and extension wherever else the conventional approaches have failed to deliver. To highlight the value of this rich resource and to develop mechanisms for local innovations and re-inventions to find their way into the formal research and development system, documentation of farmer innovations and re-inventions is necessary to give the real picture of its wealth. Scientific enquiry into the documented practices would make it to a status of formal knowledge base and studying extent of adoption of these practices by the farmers will give the real picture of farmers innovations and re-inventions. Finding out the various constraints and analysis of the innovation development process will fetch a base to develop a comprehensive strategy which can be utilized by scientists, extensionists and user system. In this study 216 farmer innovations and re-inventions were identified in different farming situations of Andhra Pradesh and Telangana states through informal interview with innovative farmers who were identified for the purpose of

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giving information on farmer innovations and re-inventions in the selected 3 districts and also from non sample area through secondary sources. Based on the various constraints faced and suggestion given by the innovative farmers a comprehensive strategy was developed which includes identification of farmer innovators, recognition of farmer innovators, documentation of farmer innovations and re-inventions, testing of farmer innovations and re-inventions for scientific rationality and validity, commercialisation of the innovations and re-inventions, networking of farmer innovators, providing farmer innovation support fund, monitoring and evaluation of the farmer innovator network groups, farmer innovator to farmer innovator cross visits and popularisation of farmer innovations and re-inventions. Strategy suggested in the study will help different agencies in promotion of farmer innovations and re-inventions and gives a brief comprehension and hence, it can be effectively utilised in promotion of these technologies through different agencies.

Keywords: Farmer innovations; reinventions.

ABBREVIATIONS

Innovation: Innovation is defined as an idea, practice, or object that is perceived as new to an individual or another unit of adoption

Reinvention: Re-invention is defined as the degree to which an innovation is changed or modified by a user in the process of its adoption and implementation

DAATTC: District Agricultural Advisory and Transfer of Technology Centre

KVK: Krishi Vigyan Kendra

1. INTRODUCTION

Farmers as everywhere in the world, are constantly developing ways to solve the problems they face, or finding ways to cope with the difficulties they have in farming or in managing their resources. However, these innovations and re-inventions are not generally known or considered by researchers or extensionists working in the same region, and often, neither are they known by other farmers facing the same difficulties. In order to share the most interesting initiatives and exchange valuable information, hoping to create awareness of what farmers are doing, and to strengthen partnerships between farmers, development organisations and research scientists documentation of these innovations and re-inventions should be done. And even though getting extensionists or researchers interested in what farmers are doing is still a challenge, we feel that it is easier if they are able to see, in a clear and well presented format, what farmers are trying out and achieving. Bringing to light farmer innovations and re-inventions is surely a positive step. Scientific enquiry into the documented practices would make it to a status of formal knowledge base and studying extent of adoption of these practices by the farmers will

give the real picture of farmers innovations and re-inventions. The innovative farmers are strategically important to design, develop and implement any research and development programme of Indian Agricultural Research [1]. The Innovation Development Process consists of all the decisions and activities and their impacts that occurs from recognition of need or a problem through research, development and commercialization of an innovation (or) re-invention, through diffusion and adoption of the innovation (or) re-invention by users, to its consequences [2]. As such there are six (6) main stages in the innovation development process 1) needs/problem identification, 2) research 3) development 4) commercialization 5) diffusion and adoption 6) consequences. Finding out the suitable strategy for the promotion of farmer innovations and re-inventions of the Innovation Development process will fetch a base which can be utilized by scientists, extensionists and user system. This study highlights some farmer innovations and re-inventions, principally in Andhra Pradesh and Telangana.

2. METHODOLOGY

An exploratory research design (Exploratory research is a methodology approach that investigates research questions that have not previously been studied in depth. Exploratory research is often qualitative in nature.) was followed to unearth farmers knowledge in the form of farmers innovations and re-inventions with an objective to unearth and document as many farmer innovations and re-inventions as possible in different farming situations and to develop a comprehensive strategy for the popularization of the farmer innovations and re invention. Andhra Pradesh and Telanagna State (before state bifurcation) was selected purposively for the study since the researcher

hails from the same State, familiarize with local language, which facilitates establishing quick rapport and carryout in depth study coupled with personal observation.

2.1 Selection of the Districts

Three (3) districts East Godavari, Khammam and Kurnool which comprises all the four farming situations viz., wetland, dryland, gardenland and hill area, as well as one district from each of three regions (Andhra, Rayalaseema and Telangana) of Andhra Pradesh State were selected purposively for the study.

2.2 Selection of Respondents

2.2.1 First phase

The list of farmer innovators under each farming situation was prepared in consultation with the officials of Department of Agriculture, Department of Horticulture, Scientists of District Agricultural Advisory and Transfer of Technology Centre (DAATTC) and Krishi Vigyan Kendras (KVK) in the selected districts for the identification and documentation of farmer innovations and re-inventions from the entire states of Andhra Pradesh and Telanagana constituting 52 farmers.

2.2.2 Second phase

A sample of 20 farmers was selected from each selected farming situation i.e., wetland, dryland, gardenland and hill area etc., thus a total of 80 farmers from each district were selected by using stratified random method of sampling. Thus a total sample of 240 farmers was selected for the present study.

2.2.3 Final selection of farmer innovators

Out of the 240 selected farmers from the sample area only 164 farmers were found to have innovative thinking and thus 164 farmer innovations and re-inventions were identified and documented by the researcher. The remaining 52 farmers were from the first phase considered as non sample area. Therefore a final sample of 216 farmers was considered for the further study and analysis

3. RESULTS AND DISCUSSION

After the identification and documentation of the 216 farmer innovations and re-inventions from

the sample and non sample area of the study, an attempt was made to develop a comprehensive strategy for effective Promotion and popularisation of farmer innovations & re-inventions and the same is presented in the figure.

3.1 Identification of Farmer Innovators (Local Knowledge And Practice of Farmers)

It was clear from the study that farmers possess considerable knowledge about the environment in which they farm, the crops they cultivate and the animals they keep. While it should not be assumed that farmer knowledge alone will provide a solution to the many challenges faced by farmers. Their innovations are driven by a range of interlinked factors mentioned below

3.1.1 Economic factors

Such as inability to afford external inputs or to grow enough food to be food secure.

3.1.2 Environmental factors

Such as the need to adapt to climate fluctuations or restore infertile soils.

3.1.3 Social factors

Such as migration and less labour availability.

3.1.4 Cultural factors

Such as the need to use certain plants for ritual and other purposes.

3.1.5 Political factors

Such as availability of subsidised fertilisers and seeds etc.

Thus the farmers are continually experimenting, adapting and innovating in order to find new better means of production and organisation to address these challenges. Therefore farmer innovators should be identified and acknowledged as the custodians of valuable farming knowledge that needs to be recognised, validated and used more generally by checking scientific rationality through mean, standard deviation, regression analysis and hypothesis testing.

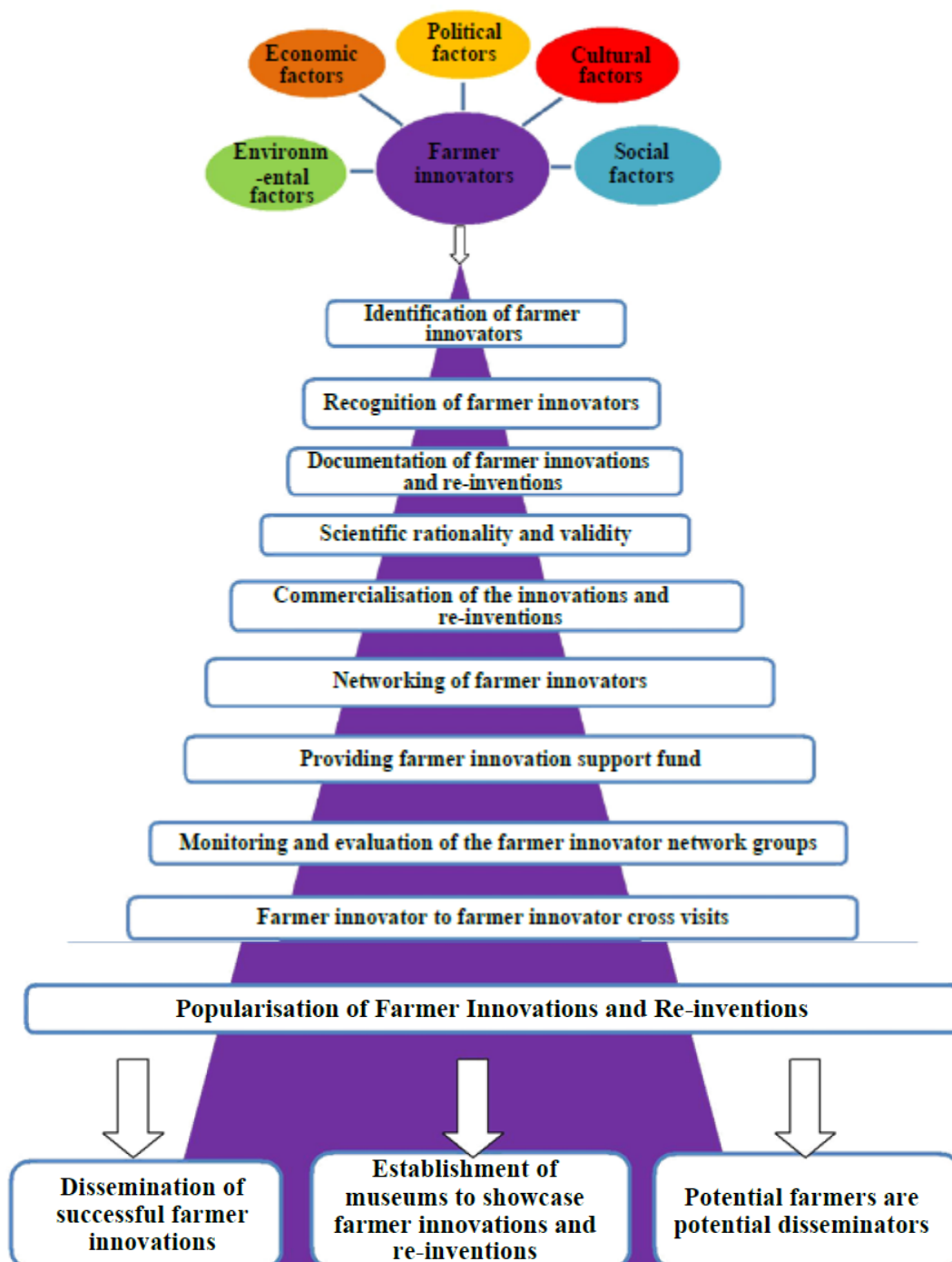


Fig. 1. Comprehensive Strategy for the popularisation of farmer innovations and re-inventions

3.2 Recognition of Farmer Innovators

Identification of farmer innovators must be done carefully to trace an innovation back to its roots, in other words should always try to find the original innovator. Giving recognition and value to the farmer innovators is crucial to institutionalise them in the formal research and

development system in order to contribute farming community empowerment and rural development. Thus the researchers and farmers can collaborate in Participatory Technology Development to find answers to specific problems, build on existing knowledge and verify farmers' innovations for effectiveness and safety [3].

3.3 Documentation of Farmer Innovations and Re-inventions

- ✚ Conducting peripatetic group meetings in order to promote awareness and to motivate local people to share farmer innovations and re-inventions often works well. Appropriate counselling ensures that local people do not get ensnared by vested interests.
- ✚ Using effective extension teaching methods and aids helps to educate local people about the importance of farmer innovations and re-inventions and hence documentation.
- ✚ Arranging scouting competitions for local people (women, farmers and children etc.) and selecting winners for awards in aiding scouting of farmer innovations and re-inventions.
- ✚ Informing local people well in advance regarding the rewards/award could be useful. This could inspire local people to share their innovations and re-inventions.
- ✚ Holding public ceremonies to honour innovators by a reward/award could be useful. This could inspire local people to share farmer innovations and re-inventions.
- ✚ Informing local people about publishing documented farmer innovations and re-inventions of local people in newsletters/journals acknowledging the identity of the innovator(s) and popularising farmer innovations and re-inventions.
- ✚ Conducting location specific peripatetic group meetings, demonstrations and farm and home visits in order to address local people's problems and priorities (eg. Insects, disease) could oblige local people to reciprocate by sharing their farmer innovations and re-inventions.
- ✚ Documentation of farmer innovations and re-inventions shall be done according to different crops, farming situations and other classifications for effective use.

3.4 Testing of Farmer Innovations and Re-inventions for Scientific Rationality and Validity

It is the process of verification- i.e., confirming that the generated innovation or re-invention by the farmer is genuine and important. Ideally a team involving research, extension and peer farmer innovators for the verification process.

Conducting field trials by the extension scientists to test the documented farmer innovations and re-inventions for scientific rationality and to develop crop wise package of these innovations and re-inventions for utilisation by farmers and also to show on farm results.

Validating farmer innovations and re-inventions at field level and also at Agricultural Research Institutes would create a strong scientific base to the rational farmer innovations and re-inventions. Another side of validation is farmers participatory research which facilitate the farmers participation in research for validation of their own innovations and re-inventions. Scientists and extension personnels should support farmers in research and development activities to encourage the farmers in the generation of the farmer innovations and re-inventions. Thus participatory research for analysis of comparison of benefit cost ratio of farmer innovations and re-inventions compared to existing agricultural practices leads to the effective generation of farmer innovations and re-inventions.

3.5 Commercialisation of the Innovations and Re-inventions

Commercialisations can take different pathways for different farmer innovators in different places encompassing both domestic and export markets and need to be supported in different ways. Currently scattered programmes are being organised by ICAR, NIF and other organisations in documentation of farmer innovations and re-inventions. There is a need to establish workable linkage and centralised mechanism or authority exclusively for farmer led innovations to cater the activities related to the patenting, IPR (Intellectual Property Rights) issue and commercialisation of local farmer innovation and re-inventions [4].

Thus the researchers and the extension personnel should motivate the farmer innovators towards the commercialisation of their innovation products.

3.6 Networking of Farmer Innovators

Networking between farmer innovators can be an important means of exchanging experience and sharpening ideas, as well as a rapid means of up scaling through the 'lateral' adoption of the farmer innovations and re-inventions by network partners. It is essential to make sure that the farmer innovators who really wishes to join a

network and take part in all the activities that entails is must for framing a network of farmer innovators . Each network should be as balanced as reasonably possible in terms of men and women and in terms of the young and the older.

Overall impact assessment needs to be carried out at critical points within the network through participatory workshops and special impact studies will definitely aid in the effective generation of innovations and re-inventions [5]. Once a network is formed it is very easy for further documentation of farmer innovations and re-inventions in other areas and also for farmer participatory approach for this purpose the organisations like ITDAs, NGOs and SHGs should be encouraged in helping establishment of the network of farmers.

Forming clusters of farmer innovators will provide a good way of organising interaction between innovators and providing a focal point for activities. Promoting formation of strong and sustainable farmer innovator network groups and encouraging self-organisation and decision making powers by farmers is a basis for increasing their demand for participatory approaches.

3.7 Providing Farmer Innovation Support Fund

Providing Farmer Innovation Support fund by different organisations (like world bank, IFOAM, FAO, ICAR and SAU's etc.) available and accessible to farmers, is very helpful to cultivate and release the potentials of farmers for generation of innovations and re-inventions.

- a. Farmer Innovation Support Fund can be a blocked sum of money, which has to be entirely managed by "organized groups of farmers" and be used only for the purpose of identification, development and sharing of farmer innovations and re-inventions on the basis of their own priorities and decision making process.
- b. Supporting farmers to access to innovation funds will help to look how the farmer and the formal innovation systems are effectively linked, in which case the initiative for the linkage and collaboration will come from farmers' side
- c. Continuing to expand the farmer innovation support fund approach, allowing more farmers and farmer groups to use this for experimentation as entry point

fundamentally changes the extension approach.

3.8 Monitoring and Evaluation of the Farmer Innovator Network Groups

Involves setting up a monitoring and evaluation (M&E) system, with discussions between partners (farmers, researchers, extension workers) about who measures (and who analyses) what and for what purpose. Particularly for an emphasis on 'farmer measurable indicators' based on parameters that the farmers want to measure like labour and other inputs, yields, rainfall etc., be monitored by the farmer (if he or she wishes to do so). Changes in soil fertility or moisture are examples of parameters that need to be measured by the researcher with special equipment. Evaluations are invariably carried out jointly by farmers, extensionists and researchers.

More attention should be given to monitoring and evaluation (M&E) during the Innovation Development Process and to develop such systems with farmers. M&E systems that both farmers and technical staff are comfortable with and that simultaneously yield user-friendly and functional data.

3.9 Farmer Innovator to Farmer Innovator Cross Visits

Arranging farmer innovator to farmer innovator cross visits first between the farmer innovators within the same network and then visits between FIs of different networks. This is the process of getting to know what others are doing, sharing ideas, and 'releasing creativity'.

And next is taking the visits one stage further. This means taking the whole network (or sometime representatives from several networks) outside the area to visit other farmers, or research stations etc. There will also be other farmers from outside visiting the area – reciprocal visits.

It is hoped that these network visits will stimulate the adoption and further development of farmer innovations and re-inventions. Ideally FIs will then expand their range of experiments, and these will again be monitored through the Monitoring & Evaluation processes

3.10 Popularisation of Farmer Innovations and Re-inventions

Awareness rising basically implies publicity. This can be carried out directly through media

campaigns as well as more informatively and indirectly through publication at various levels of advertisement (or, to put it another way, at different levels of accessibility, taking into consideration the relevant target audiences).

The following three steps were used for the popularisation of the farmer innovations and re-inventions

- a. Dissemination of successful farmer innovations.
- b. Establishment of museums to showcase farmer innovations and re-inventions
- c. Potential farmers are potential disseminators

3.10.1 Dissemination of successful farmer innovations

Although not all innovations require further research, existing successful farmer innovations and re-inventions are already good enough and attractive enough is worthy of wider dissemination. When the farmer innovators have a new farming practice or technique that can be recommend to other farmers or at least worth looking at. Peer farming community can be brought to the farm of the innovator to gain inspiration from what they see. Thus the extension personnel should facilitate the farmer innovators to organise training or field day for dissemination of their generated innovations and re-inventions. Other farmers quickly take up these “best-bet” innovations. Thus, joint experimentation by farmers and researchers and adding value to innovations is not necessary in all cases. After all, farmers are the best judges of what is useful to them. If they find an original innovation interesting they will accept or modify it further themselves. Then involves using the farmers to go out to spread messages with the extensionists. Farmer innovators act as outside trainers. Farmers often learn best from their own colleagues therefore in the dissemination process of generated innovations and re-inventions the extensionist has a key role to play both as facilitator and organiser.

3.10.2 Establishment of museums to showcase farmer innovations and re-inventions

Establishment of museums for highlighting the important role played by farmers in improving farm practices and development of the sector through the generation of innovations and re-

inventions. As most of the farmer innovations and re-inventions on are low-cost, farmer-friendly and easy for fellow farmers helps to accelerate adoption and diffusion of them. And promotes rural entrepreneurship, motivates potential farmer scientists and boosts morale of farming community. It helps to explore the scientific talents of the visiting farmers leading to new innovation and re-inventions and also serves as an alternate source of farm information/technologies.

Farmer innovations and re-inventions are displayed with actual specimens, models, photographs and full description along with the bio data of the innovator in the museum. The museum enables farmer scientists to establish the ownership of their innovations and re-inventions. It caters for the needs of the farmers, rural entrepreneurs and industrialists who are approaching to learn more about the farmers inventions and to commercialise and popularise them. The most important outcome is that it enables farmer to work for transfer of technology.

The museum offers a forum for the farmer researchers to share their findings with other fellow farmers, scientists and extension functionaries. Visitors could learn more about the innovations and re-inventions for commercialising and popularising them. It helps people understand the talents and innovative expertise of the farmers and serve as an alternative source of farm information/technologies.

3.10.3 Potential farmers are potential disseminators

Training should be imparted to the grossroot level potential farmers on the extension methodologies by the government and non governmental agencies for effective dissemination of farmer innovations and re-inventions in their localities/ areas. Inclusion of Participatory Technology Development (PTD) would be the right choice in the training programmes (Tambo and Tobias).

4. CONCLUSION

The present investigation reveals that none of the farmer innovation or re-invention has been promoted in a wider concept. The concerned government and non government organisations should made an attempt to protect the property

rights of farmer innovators and facilitate in applying patenting for intellectual property rights. It is also suggested that scientific organisations, extension agencies and private firms to identify the suitable farmer innovations and re-inventions for commercial and agriprenurship purposes. In this case the extension and scientists of the university as well as state department of Agriculture must encourage and motivate the farmers regarding the commercialisation and diffusion and adoption of the generated innovation/re-invention by the other farmers of the system. This Study also revealed that documented farmer innovations and re-inventions were having high perceived effectiveness. So that they should be promoted in the similar location specific farming situations using more community-based and participatory strategies, in which farmer innovators come together as multi stakeholder partnership. The efforts of different agencies in promotion of farmer innovations and re-inventions gives a brief comprehension and hence, it can be effectively utilised in promotion of these technologies through different agencies.

5. IMPLICATIONS OF THE STUDY

The present investigation reveals that none of the farmer innovation or re-invention has passed the commercialisation stage of Innovation Development Process. The concerned government and non government organisations should made an attempt to protect the property rights of farmer innovators and facilitate in applying patenting for intellectual property rights. It is also suggested scientific organisations, extension agencies and private firms to identify the suitable farmer innovations and re-inventions for commercial and agriprenurship purposes. In this case the extension and scientists of the university as well as state department of Agriculture must encourage and motivate the farmers

- Regarding the commercialisation and diffusion and adoption of the generated innovation/re-invention by the other farmers of the system.

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- The efforts of different agencies in promotion of farmer innovations and re-inventions gives a brief comprehension and hence, it can be effectively utilised in promotion of these technologies through different agencies.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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