

Exploring the Workings of Research and Extension in India's Farming System Dynamics

M. Santhosh Kumar¹, A. Mariselvammurugan², S. Manickavasagam³, and M. Anbarasan⁴

¹M.F.Sc – Fisheries Extension Research Scholar, Central Institute of Fisheries Education, Panch Marg, Off. Yari Road, Versova, Andheri (West), Mumbai, Maharashtra

²M.F.Sc – Fish nutrition and feed technology Research Scholar, Kerala University of Ocean Studies, Panangad, Kerala

³Assistant Professor, TNJFU – Directorate of Sustainable Aquaculture, Thanjavur Centre for Sustainable Aquaculture, Thanjavur, Tamil Nadu

⁴M.F.Sc - Aquatic Animal Health Management Research Scholar, SKUAST-K -Faculty of fisheries, Rangil, Jammu and Kashmir

SUMMARY

Farming System Research and Extension (FSRE) plays a pivotal role in addressing the multifaceted challenges faced by Indian agriculture. This article delves into the significance, evolution, challenges, and future prospects of FSRE in the Indian context.

INTRODUCTION

Indian agriculture, the backbone of the nation's economy, is undergoing rapid transformations due to factors like population growth, climate change, dwindling natural resources, and technological advancements. In this scenario, FSR&E emerges as a crucial approach to enhance agricultural productivity, sustainability, and resilience.

What do you mean by FSR&E?

The term FSR&E in the broadest sense refers to any research and extension that views the farm in a holistic manner to take care of not only farming but all aspects of nutrition, food security, sustainability, risk minimization, income and employment generation. FSR&E assumes that technology which fits to the local need of farmers is needed.



Why FSR&E was introduced?

The conventional research system in India can be traced back to the Green Revolution era of the 1960s when the focus was primarily on boosting crop yields through the adoption of high-yielding varieties and have suffered from the problem of accessibility, technical feasibility, social acceptability, economic viability, incompatibility with farmer's value system. Therefore, subsequent phases witnessed a paradigm shift towards a more holistic approach to remove the drawbacks of existing top-down extension model and to reach the unreached a new extension approach called FSR&E was introduced during 1970's.

Characteristics of Farming System Research and Extension:

- It follows holistic approach of development at the local level
- It is built on the principles of productivity, profitability, sustainability and stability
- It requires commonly homogenous type of farmers
- It considers the family/household as an integral part of farming system
- It uses existing farmer organization to transfer technologies to local people
- Based on the premise of the active participation of farmer in development process.

Trials in FSR&E

Trials in FSR&E

Different types of trials are generally conducted in FSR&E:



Challenges Faced by FSR&E in India

Despite its potential benefits, FSRE encounters several challenges in the Indian context. These includes,

- Inadequate funding and infrastructure,
- Limited adoption of research findings by farmers,
- Socio-economic disparities, Success usually depends upon the collaboration of scientist, extension personnel and farmers
- Insufficient capacity building among extension workers
- Slow visibility of results

Future Prospects and Recommendations

To harness the full potential of FSRE in India, concerted efforts are needed to **enhance investment** in agricultural research and extension, strengthen institutional linkages between research organizations, extension agencies, and farmers' associations, promote participatory approaches for technology co-creation and dissemination, and prioritize the integration of traditional knowledge with modern scientific practices. Create a **proper and strong framework** for establishing a strong FSR&E approach in India but Bringing multidisciplinary scientist's less than one umbrella is very difficult task

CONCLUSION

In conclusion, FSRE holds immense promise as a holistic approach to address the complex challenges confronting Indian agriculture. By fostering synergy between research, extension, and farmers' knowledge systems, FSR&E can pave the way for a sustainable, resilient, and inclusive agrarian future in India.

REFERENCES

- K. Singh, Handbook of Agricultural Extension, ICAR, New Delhi.
- Kumar, P., & Pal, M. (2019). Farming System Research in India: Current Status, Challenges, and Future Prospects. *Indian Journal of Agricultural Sciences*, 89(3), 335–344.
- Rathod, P., & Patel, H. (2021). Role of Farming System Research and Extension in Sustainable Agriculture: A Review. *International Journal of Current Microbiology and Applied Sciences*, 10(3), 2154–2161.
- Singh, R. K., & Singh, A. K. (2018). Farming System Research and Extension in India: An Overview. *Journal of Agricultural Engineering and Food Technology*, 5(2), 213–220.