



Promoting Farmers to Farmers Extension to Reach the Unreached: Comparative Evidence of 2003 & 2013 NSSO data

Sudhanand Prasad Lal^{1*} and Shruti Samadder²

¹Assistant Professor cum Scientist, Department of Agricultural Extension Education (PG College of Agriculture), Dr Rajendra Prasad Central Agricultural University, Pusa, Samastipur (Bihar), India.

²M.Sc. Scholar, Department of Extension Education, C.P. Collage of Agriculture, Sardarkrushinagar Dantiwada Agricultural University, Dantiwada (Gujarat), India.

(Corresponding author: Sudhanand Prasad Lal*)

(Received 03 April 2020, Accepted 20 June, 2020)

(Published by Research Trend, Website: www.researchtrend.net)

ABSTRACT: This study examines agricultural information sources utilising data from NSSO 2003 and NSSO 2012-2013 and decadal trends to get insights into the dynamics of agricultural knowledge dissemination in India. The findings exhibited the strengths and shortcomings of various information sources, emphasising the importance of tailored actions to improve the efficacy and reach of agricultural extension services. In 2003, only 40.4% of people in India received information from any source. This figure was even lower in Bihar, with just 32.4% of peasants getting information from any source. This means less than one in three farmers in Bihar had access to any information. Progressive farmers are the most trusted source nationwide, emphasizing peer-to-peer learning, while radio was the most popular in Bihar. However, from 2012 to 2013, there was a significant decline from 40.6% to 35% in dependence on all information sources, notably extension agents, KVKs, and agricultural universities/colleges, implying that official extension programmes may not be as accessible because fewer in numbers. The finding shows that if it is proposed to provide one village extension worker for every 800-1000 farm families then the requirement of field-level extension workers is estimated to be about 13-15 lakhs, against which the present availability is only about one lakh workers. Progressive farmers and private commercial agents remain vital, albeit their use has marginally diminished. Decreased reliance on media outlets implies that farmers require higher-quality, more relevant content to suit their informational needs. Veterinary and non-governmental organisation (NGO) services also had lower access, exposing inadequacies in integrating livestock management and community-based initiatives into broader agricultural advising systems. Future research should include a follow-up survey in 2023 to provide updated information on current trends and the effectiveness of agricultural information sources.

Keywords: Agricultural Extension, Farmers-to-Farmers Extension (F2FE), Information Dissemination, NSSO, Rural Development.

INTRODUCTION

Agriculture is the foundation of rural life in India, but the industry faces ongoing hurdles in knowledge dissemination and technology adoption, particularly among smallholder and marginal farmers. Traditional extension programmes, generally limited in reach and resource availability, struggle to meet these farmers' unique and localised demands. In this setting, Farmers-to-Farmers Extension (F2FE) (Kiptot and Franzel 2019) appears as a viable option, using lead farmers' experiential knowledge and social capital to support peer-to-peer learning and innovation dissemination. This study investigates the efficiency of F2FE by examining decadal data from the National Sample Survey Office (NSSO). The NSSO's large datasets provide a solid framework for assessing the long-term impacts and scalability of F2FE efforts in various agro-climatic zones of India. This study intends to quantify

the benefits of F2FE and its role in closing the extension service gap by thoroughly examining key agricultural variables such as crop yields, pest management techniques, and household incomes. The major goal of this research was to determine how F2FE contributes to better agricultural practices and socioeconomic outcomes for farmers who have historically been unreached by traditional extension services. During fair (Lal *et al.*, 2015; 2016a; 2016b) F2FE played a pivotal role. Understanding the dynamics and efficacy of F2FE allows us to identify strategic initiatives that will increase its reach and impact. This study not only provides empirical data to support the expansion of F2FE, but it also makes policy recommendations to institutionalise this method, ensuring that it becomes an integral part of the agricultural extension landscape in India. The findings of this study are likely to inform policymakers, agricultural researchers, and extension agents on the

vital significance of F2FE in promoting sustainable agricultural development. By advocating for a decentralised and farmer-centric extension approach, we can empower the underserved, accelerate rural development (Pain and Hansen 2019), and eventually contribute to a more resilient and productive agricultural sector.

MATERIALS AND METHODS

This study employed a mixed-methods approach, combining quantitative data analysis with qualitative insights. The quantitative analysis focuses on evaluating the impact of Farmers-to-Farmers Extension (F2FE) on agricultural productivity and household incomes. The qualitative analysis explores the experiences and perceptions of farmers involved in F2FE initiatives. This research is conducted in Bihar. In total 1000 respondents were selected randomly. An ex-post facto research design was followed in study. This study adheres to ethical standards in research, ensuring

informed consent, confidentiality, and the voluntary participation of all respondents. Ethical approval is obtained from the relevant institutional review board. This study's potential drawbacks include its dependence on self-reported data, which may be vulnerable to recall bias, as well as the generalizability of findings to other locations or contexts outside the scope of the NSSO dataset. Future study should include longitudinal studies and experimental approaches to validate the findings. This study attempted to give a comprehensive review of F2FE's impact on agricultural development in India by using robust data analysis methodologies and including both quantitative and qualitative findings.

RESULTS AND DISCUSSION

The data presented outlines the reliance on various sources of agricultural information (Shonhe, 2017) among farmers in India and Bihar, including their respective ranks.

Table 1: Farmer households accessing modern agricultural technology (Figures in thousand).

Sr. No.	Particulars	India	Rank	Bihar	Rank
1.	Other progressive farmer	167	I	100	III
2.	Input dealer	131	II	124	II
3.	Radio	130	III	173	I
4.	TV	93	IV	34	V
5.	Newspaper	70	V	57	IV
6.	Extension worker	57	VI	4	VI
	Total	648		492	
	Any Source	404		324	

(Source: NSSO, 2003)

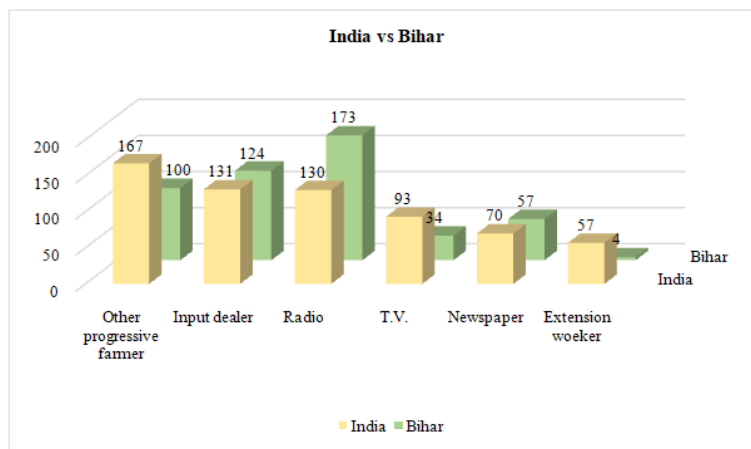


Fig. 1. Farmer households accessing modern agricultural technology.

In 2003, over 40% of farmer families across India had access to information on modern agricultural technologies from multiple sources. The most widely used sources included 'other progressive farmers', 'input dealer', 'radio', and 'TV'. Progressive Farmers' Dominance: At the national level, other progressive farmers (Yadav *et al.*, 2019) are the most important source, demonstrating the strength of peer learning. However, radio is more popular in Bihar, indicating regional preferences for information sources. Input merchants play an important part in the agricultural information network, as evidenced by their persistent

presence both nationally and in Bihar. Media Sources: Radio is especially popular in Bihar, but radio, television, and newspapers have a wider reach yet nevertheless play important roles on a national scale. Extension Services: The comparatively low ranking of extension workers in both contexts indicates possible areas for development in formal extension services to better assist farmers. This analysis emphasises the need of region-specific agricultural information distribution strategies, which use the most effective routes to reach and empower farmers.

Table 2: Percentages of farmer households accessing modern agricultural technology in 2012 and 2013.

Particulars	2012	Rank	2013	Rank
Progressive farmer	20	I	18.4	I
Radio/tv/newspaper/internet	19.6	II	17	II
Veterinarian	8	III	6.8	III
Private commercial agents (including drilling contractor)	7.4	IV	6.6	IV
Extension agent	6.2	V	3.8	V
Krishi Vigyan Kendra	2.7	VI	2.4	VI
NGO	1.2	VII	0.9	VII
Agricultural university/college	1.2	VIII	0.9	VIII
Any agent	40.6		35	

(Source: NSSO, 2013)

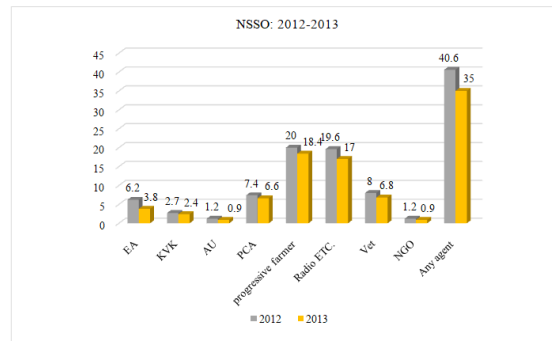


Fig. 2. Percentages of farmer households accessing modern agricultural technology in 2012 and 2013 (Legends: EA: Extension agent, KVK: Krishi Vigyan Kendra, AU: Agricultural university/college, PCA: Agricultural university/college, Radio etc: Radio/tv/newspaper/internet, Vet: Veterinarian)

Data from 2012 and 2013 show many major trends in farmers' dependence on diverse sources of agricultural information. The general drop in the utilisation of these sources reflects significant changes in the agricultural information landscape over this time. The reduction in access to extension agents from 6.2% in 2012 to 3.8% in 2013 is a cause for worry. Extension agents play an important role in spreading agricultural knowledge and technologies. This drop may be due to decreased accessibility or less number of official extension services (Lal *et al.*, 2014). It emphasises the importance of improving extension systems through improved training, resources, and interaction with community-based approaches. Krishi Vigyan Kendra (KVK): The tiny fall in reliance on KVKs, from 2.7% to 2.4%, indicates a minor reduction in their role as information providers. KVKs are essential for encouraging novel farming methods. Improving their reach and relevance to farmers' needs could help reverse this tendency. Agricultural Universities/Colleges: The decrease from 1.2% to 0.9% suggests less interaction between farmers and academic institutions. Agricultural institutions and colleges are important sources for advanced knowledge and research. Strengthening ties between these institutions and farmers could aid in the spread of cutting-edge technologies and practices. Private Commercial Agents: The reliance on private commercial agents, which included drilling contractors, fell from 7.4% to 6.6%. While private agents can often provide essential services, it is critical that they provide accurate and unbiased information. Policies (Bora, 2019) that regulate and encourage private consulting services may improve their contribution to agricultural information distribution. Progressive Farmers: The reliance on progressive farmers has dropped from 20% to 18.4%. Progressive farmers are crucial to peer

learning and innovation spread. Recognising, training, and providing resources to these farmers can help them play a larger role as community agricultural leaders. Media sources (radio, television, newspaper, internet): The drop from 19.6% to 17% suggests less use of mainstream media and internet networks. These resources are vital for reaching a large audience. Improving the quality and relevancy of agricultural material. Veterinarians (Vets): The reliance on veterinarians (Lal *et al.*, 2016) has dropped from 8% to 6.8%. Veterinarians are essential for cattle health and management. Farmers who rely on animals may benefit from strengthening veterinary services and integrating them into larger agricultural consulting systems. Non-Governmental Organisations (NGOs): The minor decrease in reliance on NGOs, from 1.2% to 0.9%, shows a diminished involvement in agricultural information dissemination. Non-governmental organisations (NGOs) frequently reach out to marginalised groups to encourage sustainable practices. Supporting and growing successful NGO activities can increase their effect.

CONCLUSIONS

The analysis of agricultural information sources, including data from the NSSO 2003 and 2012-2013, as well as decadal trends, reveals the dynamics of agricultural knowledge distribution in India. Progressive farmers are the most trusted source globally, stressing peer-to-peer learning, but in Bihar, radio is the most preferred source, reflecting regional dependence on audio-based communication. There has been a considerable decline in dependence on all information sources from 2012 to 2013, notably extension agents, KVKs, and agricultural universities/colleges, suggesting potential concerns

with the accessibility and effectiveness of formal extension programs. Progressive farmers and private commercial agents are still essential, although their use has dropped slightly, emphasising the need of non-governmental and peer-reviewed sources in the agricultural information ecosystem. Despite their relevance, dependence on media outlets has fallen, demonstrating the need. Despite their relevance, farmers' reliance on media outlets has decreased, highlighting the need for higher-quality, more relevant content to suit their informational demands. The usage of veterinarian and NGO services has also dropped, pointing to limitations in integrating livestock management and community-based efforts into broader agricultural advising systems. To address these difficulties, policymakers should prioritise revitalising extension services through training, resources, and innovative delivery methods, such as mobile-based advisory services, while also formalising Farmers-to-Farmers Extension (F2FE) programmes to empower lead farmers and promote best practices. Improving content quality and relevance on mass media and digital platforms, developing relations with agricultural colleges, regulating private advisory services for accuracy and unbiased information, and integrating veterinary services can further boost knowledge transmission. Supporting and growing successful NGO programmes can increase their influence, particularly on marginalised people. By addressing these gaps, policymakers and practitioners can ensure that all farmers have access to the information and resources required for sustainable agricultural growth, hence increasing agricultural resilience and production. Farmers-to-Farmers Extension (F2FE) can help improve information distribution in areas like Bihar, where specialised media, like as radio, are highly effective.

FUTURE SCOPE

The study's future scope will include a follow-up poll in 2024 to provide updated insights into current trends and the effectiveness of agricultural information sources. Furthermore, measuring the influence of digital platforms, investigating regional differences, and determining the role of women in information transmission are critical issues for future research. Studying the long-term impact of Farmers-to-Farmers Extension (F2FE), incorporating climate-smart practices, and assessing the efficacy of public-private partnerships can all yield useful information. Furthermore, evaluating the effects of recent policy changes will aid in determining their effectiveness and finding areas for improvement. By following these objectives, the project hopes to improve agricultural information transmission tactics, thereby increasing farmer livelihoods and productivity across India. Other areas of focus should include measuring the influence of digital platforms, investigating regional inequities, and reviewing the role of women in information

transmission. Studying the long-term impact of Farmers-to-Farmers Extension (F2FE), incorporating climate-smart practices, analysing the effectiveness of public-private partnerships, and evaluating the impact of recent policy changes will aid in understanding their efficacy and identifying areas for improvement. By addressing these gaps and pursuing these future research topics, the study hopes to improve agricultural information transmission tactics, boosting farmer livelihoods and productivity across India.

Acknowledgement. The authors acknowledge National Sample Survey Organisation Ministry of Statistics and Programme Implementation, Government of India.

REFERENCES

- Bora, A. (2019). A preliminary survey on odonate communities of Saipung Reserve Forest, Meghalaya, India. *In Biological Forum - An International Journal*, **11**(2): 103–106.
- Kiptot, E., & Franzel, S. (2019). Developing sustainable farmer-to-farmer extension: Experiences from the volunteer farmer-trainer approach in Kenya. *International journal of agricultural sustainability*, **17**(6): 401-412.
- Lal, S. P., Mohammad, A. & Ponnusamy, K. (2015). Divulging Magnitude of Perceptual Levels of Participants in National Dairy Mela (Fair) of India: A Farmers' Perspective. *Journal of Global Communication*, **8** (2): 158-165.
- Lal, S. P., Mohammad, A. Ponnusamy, K. and Kale, R.B. (2016a). A methodological pathway to quantify perception of the participants in animal fairs with relevance to national dairy mela at NDRI Karnal, India. *Journal of Animal Research*, **6**(3): 437-444.
- Lal, S. P., Mohammad, A., Ponnusamy, K., & Kale, R. B. (2016b). Expectation of participants in national dairy fair of India: A complete itemization by multivariate analysis. *The Indian Journal of Animal Sciences*, **86**(8): 940–946.
- Lal, S.P., Singh, S.R.K., Goyal, J. and Tiwari, M (2014). Good Agricultural Practices (GAP) and Good Dairy Farming Practices (GDFF) – A Way Forward to Promote the Family Farming and Attract Rural Youth, In: M.L. Choudhary & Aditya (eds.), *Family Farming and Rural Economic Development*, pp. 159-172, NIPA, New Delhi.
- Ministry of Statistics and Programme Implementation Government of India. (2003). Situation Assessment Survey of Farmers, Access to Modern Technology for Farming (Report No. 499(59/33/2)).
- National Sample Survey Organisation Ministry of Statistics and Programme Implementation Government of India. (2013). Key Indicators of Situation of Agricultural Households in India (NSS KI (70/33)).
- Pain, A., & Hansen, K. (2019). *Rural development*. Routledge.
- Shonhe, L. (2017). A literature review of information dissemination techniques in the 21st century era. *Library Philosophy and Practice (e-journal)*, 1731.
- Yadav, N., Banerjee, K., & Bali, V. (2019). Fatigue Detection of Workers using Supervised Learning. *In Biological Forum – An International Journal*, **11**(1): 236–242.

How to cite this article: Lal, S.P. and Samadder, S. (2020). Promoting Farmers to Farmers Extension to Reach the Unreached: Comparative Evidence of 2003 & 2013 NSSO data. *Biological Forum – An International Journal*, **12**(1): 58-61.