

Enabling Sustainable Agriculture: The Policy Role of Extensionists in Natural Farming

Devraj Jevlya^{1*}, Abhijeet Sarje² and U. S. S. Lekha³

^{1,2,3}Ph.D. Scholar, Department of Agricultural Extension and Communication, AAU, Anand-388110

Corresponding Author

Devraj Jevlya

Email: djevlya@gmail.com



OPEN ACCESS

Keywords

Natural farming, Environmental sustainability, Policy role

How to cite this article:

Jevlya, D., Sarje, A. and Lekha, U. S. S. 2025. Enabling Sustainable Agriculture: The Policy Role of Extensionists in Natural Farming. *Vigyan Varta* 6(8): 130-134.

ABSTRACT

Natural farming is gaining importance in India as a sustainable alternative to conventional agriculture, emphasizing chemical-free practices, biodiversity, and soil health. Supported by policies like NMNF, BPKP, PM-PRANAM, and MOVCDNER, it promotes low-cost, eco-friendly farming methods. Agricultural extensionists play a key role in its implementation by training farmers through Farmer Field Schools, SHGs, and demonstration plots. Despite its benefits, adoption faces hurdles such as limited resources, farmer resistance, and lack of technical training. Strengthening extension services through capacity building and better communication is essential. Scaling natural farming can improve food security, farmer incomes, and environmental sustainability, making it a crucial part of India's agricultural transformation.

INTRODUCTION

We are in the era of Industry 4.0 and Agriculture 4.0, implementing precision farming with automation agriculture and highest efficiency in output, use of genomics, best use of water, energy and carbon (De Clercq *et al.*, 2018). However,

increasing carbon emission and negative effects of intensive agricultural practices on surrounding environment, soil health and food chain quality due to lopsided technological push up and lack of mainstreaming of environment friendly technologies in

agriculture from field to plate are the cause of concern in 21st Century (Ozlu *et al.*, 2022). In India, climate-related challenges like rising temperatures, unpredictable rainfall, extended droughts, and extreme weather conditions are increasingly impacting crop yields and livestock performance (Amulya *et al.*, 2025). Due to this natural farming is emerging as a transformative approach to agriculture, emphasizing sustainability, ecological balance, and reduced chemical input.

Natural farming is a generic term which is based on basic ecological principles. At the global level, the “natural way of farming” without uses of chemicals and adopting ecological farming approach was established by Masanobu Fukuoka, a Japanese farmer and philosopher as a new term in his book the “One-straw Revolution” in 1935 and “Nature Farming” established in 1936 by Mokichi Okada.

Indian Perspective of Natural Farming

Besides the Masanobu Fukuoka and Mokichi Okada in Japan, broad tradition of ‘natural farming’ in India is propounded by advocates such as Shri Narayana Reddy (Karnataka), Shri Shripad Dabholkar (Maharashtra), Shri G Nammalvar (Tamil Nadu), Shri Deepak Suchde (Madhya Pradesh) and Shri Bhaskar Save (popularly referred to as the ‘Gandhi of Natural Farming’, working in Gujarat). Natural Farming based on ‘Zero-Budget’ input cost, is a system developed in the 1980s by Shri Subhash Palekar and number of its variants are available in ancient Indian literature and Vedic agriculture (Bharucha *et al.*, 2020; Sharma *et al.*, 2022).

In India, this movement is gaining momentum through various government initiatives and schemes. At the heart of this transformation are agricultural extensionists—trained professionals who bridge the gap between research institutions and farmers. Their role is

pivotal in disseminating knowledge, facilitating adoption, and ensuring the success of natural farming practices.

What is Natural Farming?

Natural farming, is an agricultural method that eliminates the use of synthetic chemicals and fertilizers. Instead, it relies on natural inputs like cow dung, urine, and locally available organic materials to enhance soil fertility and plant health. The core principles include:

- **Soil Health:** Maintaining and improving soil fertility through organic matter and microbial activity.
- **Biodiversity:** Encouraging a diverse ecosystem to control pests and diseases naturally.
- **Water Conservation:** Implementing rainwater harvesting and efficient irrigation techniques.
- **Economic Viability:** Reducing input costs and increasing farmers' income.

This approach not only enhances productivity but also ensures environmental sustainability and food security.



Benefits adopter-farmers can perceive by natural farming

- ✓ Reduced cost of cultivation
- ✓ Premium product quality
- ✓ Improve soil quality
- ✓ Reduce exposure of pesticide



Perception of non-NF farmers for not adopting natural farming

- ✓ Fear of poor yield
- ✓ Possibilities of crop failure
- ✓ No guarantee of premium price

Government Schemes/Programs for Promoting Natural Farming

The Indian government has launched several schemes to promote natural farming:

1. **National Mission on Natural Farming (NMNF):** A newly launched (November 2024) 2481 crore Centrally Sponsored Scheme by Ministry of Agricultural and Farmers Welfare. Its aim is to promote chemical free, sustainable and indigenous practices across the country through cluster development approach (15000 cluster have to develop which cover 7.5 lakh hectare and reach up to 1 crore farmers by the end of 2026).
2. **Bharatiya Prakritik Krishi Paddhati (BPKP):** A sub-mission under the Paramparagat Krishi Vikas Yojana (PKVY), BPKP promotes traditional indigenous practices, focusing on on-farm biomass recycling and exclusion of synthetic chemicals. The scheme offers financial assistance for cluster formation, capacity building, and certification.

3. Mission Organic Value Chain Development for North Eastern Region (MOVCDNER):

Launched in 2015-16, this scheme aims to strengthen organic agriculture in Northeast India by supporting Farmer Producer Organizations (FPOs), providing organic certification, and enhancing market access.

4. **PM-PRANAM:** The Programme for Restoration, Awareness, Nourishment, and Amelioration of Mother Earth (PM-PRANAM) incentivizes states to promote organic and natural farming by allocating 50% of fertilizer subsidy savings to them. It also supports the establishment of bio-input centers and promotes climate-resilient crops.

5. Pradhan Mantri Kisan Urja Suraksha Evam Utthaan Mahabhiyan (PM-KUSUM):

This scheme encourages farmers to adopt solar energy solutions, reducing dependence on diesel and promoting sustainable irrigation practices.

The Policy Role of Extensionists in Natural Farming

Extensionists play a crucial role in the successful implementation of natural farming policies:

- **Knowledge Dissemination:** They educate farmers about the benefits and techniques of natural farming through workshops, field demonstrations, and training sessions.
- **Capacity Building:** Extensionists train farmers in sustainable practices, ensuring they have the skills and knowledge to implement natural farming methods effectively.
- **Advisory Services:** They provide personalized guidance to farmers, addressing specific challenges and offering solutions tailored to local conditions.

- **Monitoring and Evaluation:** Extensionists assess the progress of natural farming initiatives, ensuring that policies are being implemented effectively and making necessary adjustments.
- **Policy Advocacy:** They act as intermediaries between farmers and policymakers, advocating for farmer needs and influencing policy decisions.

Their work ensures that natural farming policies are not just theoretical but are effectively translated into practice on the ground

Extension Methods in Natural Farming

1. **Farmer Field Schools (FFS):** FFS is a participatory approach where farmers engage in group-based learning, experimenting with and observing farming practices. This method empowers farmers to make informed decisions about their agricultural practices.
2. **Demonstration Plots:** Extensionists establish demonstration plots to showcase the benefits of natural farming techniques. These plots serve as practical examples for farmers to observe and learn from.
3. **Training Programs:** Regular training sessions are conducted to update farmers on the latest natural farming practices, pest management strategies, and soil fertility enhancement techniques.
4. **Community-Based Initiatives:** Extensionists facilitate the formation of Farmer Interest Groups (FIGs) and Self-Help Groups (SHGs) to promote collective learning and resource sharing among farmers.

Challenges Faced by Extensionists

Despite their crucial role, extensionists face several challenges:

- **Limited Resources:** Insufficient funding and materials hinder the effective implementation of training programs.
- **Resistance to Change:** Farmers' reluctance to adopt new practices due to traditional beliefs or fear of failure.
- **Communication Barriers:** Difficulty in conveying technical information in an understandable manner.
- **Inadequate Training:** Lack of continuous professional development for extension personnel.

CONCLUSION

Extensionists are instrumental in the successful adoption of natural farming practices. By providing knowledge, training, and support, they empower farmers to transition towards sustainable agricultural practices. Addressing the challenges faced by extensionists and implementing strategies to enhance their effectiveness will contribute significantly to the promotion of natural farming and the achievement of food security and environmental sustainability.

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