



INCLUSION TECHNIQUES FOR INDIAN FARMERS: PROBLEMS, STRATEGIES AND OUTCOMES

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Abstract

Agriculture remains the backbone of the Indian economy, providing livelihood to a large proportion of the population. However, despite various reforms and technological advancements, a large number of farmers especially small and marginal farmers remain excluded from the benefits of development. Inclusion techniques aim to integrate these farmers into mainstream agricultural growth by ensuring access to knowledge, technology, credit, markets, and institutions. Inclusive agriculture is crucial for reducing rural poverty, income inequality, and regional imbalance while promoting sustainability.

Indian agriculture is dominated by small and marginal farmers who often face exclusion from modern technology, markets, institutional credit, and decision-making processes. Farmer inclusion has become essential for achieving sustainable agricultural growth, food security, and rural development. This research paper examines the major problems related to the exclusion of Indian farmers and analyses various inclusion techniques such as participatory extension methods, Farmer Producer Organizations (FPOs), digital agriculture, cooperative institutions, and policy interventions. The study is based on secondary data collected from government reports, research journals, and institutional publications. The findings indicate that inclusive techniques significantly enhance farmers' access to resources, improve productivity, and strengthen socio-economic conditions. The



paper concludes that an integrated and farmer-centric approach is necessary to ensure inclusive and sustainable agricultural development in India.

Keywords : Farmer Inclusion, Indian Agriculture, Participatory Extension, FPOs, Digital Agriculture, Sustainable Development.

Objectives of the Research Paper :

The present research paper has the following objectives:

1. To study the concept and importance of inclusion techniques for Indian farmers.
2. To identify major problems related to the exclusion of farmers in India.
3. To analyse various inclusion techniques adopted in Indian agriculture.
4. To evaluate the outcomes of inclusive approaches on farmers' socio-economic conditions.
5. To suggest measures for strengthening farmer inclusion in India.

Research Methodology:

The study is based on secondary data. Relevant information has been collected from government publications, reports of the Ministry of Agriculture, ICAR, NABARD, research journals, books, and reliable online sources.

Problems in Farmer Inclusion:

Despite agricultural growth, many farmers remain excluded from innovations due to lack of access to technology, training, and institutional support. For example, about 86 % of Indian farmers are still outside the reach of modern agricultural technologies, limiting their productivity and resilience to change.

Key exclusion issues include:

1. Low awareness of new techniques
2. Limited access to extension services
3. Poor connectivity and digital divide
4. Institutional and bureaucratic hurdles
5. Participatory and Inclusive Techniques



Participatory Extension Approaches:

Involving farmers directly in extension activities helps bridge knowledge gaps and increases adoption of improved practices. Participatory methods like Farmer Field Schools (FFS) and Farmer-to-Farmer Extension (FFE) encourage knowledge exchange, group learning, and collective problem-solving. Studies have shown these methods effectively disseminate technical information and build skills through field-based training.

Farmer Field Schools (FFS):

FFS engage groups of farmers over a crop season, giving them hands-on experience with improved sowing, pest management, soil fertility, and eco-friendly practices. This direct engagement fosters peer learning and greater trust.

Farmer-to-Farmer Extension (FFE):

In FFE models, experienced farmers share successful techniques with peers, enhancing community-level knowledge transfer and reducing dependence solely on external experts.

Participatory Research and Innovation:

Participatory approaches integrate farmers' local knowledge with scientific research to co-develop solutions appropriate to local conditions and needs. Such approaches have shown success in improving adoption and sustainability of agricultural innovations.

Technology and Digital Inclusion:

Innovative tools like AI-powered query systems and multilingual chat bots help farmers get instant, understandable advice. These systems can overcome literacy barriers and connectivity challenges, especially in rural India.

Institutional Inclusion Mechanisms:

Participatory Farming Systems Integrated farming models such as combined crop livestock horticulture systems provide multiple livelihood options, improve resource use, and enhance participation of tribal and marginal farmers.

Indian Council of Agricultural Research:



Strengthening Cooperative and Institutional Platforms Cooperative societies, PACS, and farmer producer organisations (FPOs) can help small farmers access markets, credit, inputs, and technology more effectively. Research shows that institutional support helps overcome barriers related to credit, land size, and services.

Policy and Practice Recommendations:

a. Expand participatory extension services

Policy frameworks should support scaling of FFS and community-led training programs with localized content and farmer involvement.

b. Improve digital access and literacy

Infrastructure investment in rural connectivity and user-friendly digital tools in local languages will improve access to advisory services and market information.

c. Support institutional capacity building

Strengthening cooperatives and FPOs can ensure small farmers gain bargaining power and equitable access to technology and markets.

d. Encourage co-creation of innovation

Researchers, extension agents, and farmers should co-design solutions that reflect local agro-ecological realities and socio-economic constraints.

Conclusion:

Inclusion techniques that combine participatory learning, institutional support, and accessible technologies not only empower Indian farmers but also enhance agricultural sustainability. Inclusive agriculture links knowledge with action, strengthens rural livelihoods, and helps achieve equitable growth in the sector.

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