



ISSN Print: 2664-6064
ISSN Online: 2664-6072
NAAS Rating (2025): 4.69
IJAN 2025; 7(7): 128-129
www.agriculturejournal.net
Received: 13-05-2025
Accepted: 15-06-2025

Raghavendra Mall
Ph.D. (Research Scholar),
Department of Agricultural
Extension, BRD PG College,
Deoria, Deen Dayal Upadhyay
University, Gorakhpur, Uttar
Pradesh, India

Dr. Pradeep Dwivedi
Professor, Department of
Agricultural Extension,
B.R.D. PG College, Deoria,
Uttar Pradesh, India

Mohd Mosif Raja
Research Scholar, Department
of Agricultural Extension,
B.R.D. PG College, Deoria,
Uttar Pradesh, India

Vijay Nandan Pandey
Research Scholar, department
of Agricultural Extension,
B.R.D PG College, Deoria,
Uttar Pradesh, India

Corresponding Author:
Raghavendra Mall
Ph.D. (Research Scholar),
Department of Agricultural
Extension, BRD PG College,
Deoria, Deen Dayal Upadhyay
University, Gorakhpur, Uttar
Pradesh, India

An analysis of the extension education system in India: Structure, sub-systems, and emerging challenges

Raghavendra Mall, Pradeep Dwivedi, Mohd Mosif Raja and Vijay Nandan Pandey

DOI: <https://www.doi.org/10.33545/26646064.2025.v7.i7b.255>

Abstract

This study critically examines the extension education system in India by exploring its institutional structures, sub-systems, ethical considerations, and evolving challenges. Extension education serves as a bridge between agricultural research institutions and rural farming communities, promoting the adoption of improved technologies and practices. Using a system-based perspective and qualitative content analysis, this paper outlines the strengths and deficiencies of the current system. The findings highlight the lack of curriculum standardization, weak ethical frameworks, and institutional fragmentation, which hinder the system's effectiveness. Based on this, recommendations have been offered to improve system integration, professional legitimacy, and the use of ICT in extension services.

Keywords: Extension education, system approach, sub-systems, agricultural knowledge, ethics, curriculum, India

Introduction

Extension education plays a pivotal role in India's agricultural development, acting as a crucial link between scientific innovations and rural practitioners. It enables farmers to enhance productivity, sustainability, and income by equipping them with timely and accurate knowledge. As the agricultural sector becomes increasingly knowledge-intensive, the extension system must evolve accordingly. However, despite its essential role, extension education in India suffers from several structural and operational inefficiencies, including fragmented institutions, outdated curricula, and weak professional standards. This paper applies a system approach to understand the components, sub-systems, and ethical dimensions of extension education, and offers evidence-based recommendations for reform.

Review of Literature

The concept of extension education has evolved significantly over time. Choudhury and Mishra (2008) ^[1] emphasized the adoption of a systems framework for analyzing extension delivery. Their work suggests that the performance of extension agencies improves when seen as part of a broader system of inputs, processes, and outputs. Meena *et al.* (2020) ^[2] explored the issue of curriculum disparities in State Agricultural Universities (SAUs), noting that inconsistent course content has led to uneven knowledge and skill development among extension professionals. Rao and Patel (2021) ^[3] argued for the formation of a national accreditation body to regulate extension education, citing a lack of recognition of extension as a standalone discipline. ICAR (2022) ^[6] introduced a framework for integrating digital tools in extension services (Kumar N *et al.*, 2023) ^[4], but its implementation has been slow due to poor ICT infrastructure in rural areas. Bansal *et al.* (2023) ^[6] raised ethical concerns such as data misuse, absence of informed consent, and gender exclusion, all of which undermine the trustworthiness of extension systems. These studies collectively underscore the need for structural, ethical, and pedagogical reforms in the Indian extension education system.

Methodology

The study is based on qualitative content analysis. Data sources include official documents from ICAR, extension-related textbooks, curriculum outlines from SAUs, and peer-reviewed journals. A system approach was used to categorize the functioning of extension education

into inputs, processes, outputs, and feedback mechanisms, allowing for a holistic assessment.

The System Approach in Extension Education

Extension education is a complex system composed of interrelated units functioning toward a common goal: the dissemination and adoption of improved agricultural practices. Inputs include research findings, financial support, manpower, and policies. These are processed through methods such as training, farm demonstrations, media campaigns, and advisory services. Outputs take the form of increased awareness, technology adoption, and behavioural change. Feedback from farmers, field trials, and monitoring reports feed into the system for continuous improvement. This cyclic system allows extension to adapt and respond to evolving rural needs.

Major Sub-systems in the Indian Extension Framework

The Indian extension system is supported by several sub-systems. The institutional sub-system comprises ICAR institutes, KVKs, SAUs, and ATMA, which are the backbone of formal extension infrastructure. The functional sub-system includes education, training, communication, and participatory research. The administrative sub-system manages budgeting, human resources, and implementation policies. The human resource sub-system involves trained extension personnel and technical staff. The evaluation sub-system captures feedback, assesses outcomes, and refines future strategies. All these subsystems are interdependent and require coordination to function efficiently.

Components and Operational Features

The Indian extension education system features diverse operational models and instructional approaches. However, the curriculum remains non-standardized, leading to inconsistent training quality. While some institutions incorporate ICT-based learning and hands-on demonstrations, others rely heavily on classroom lectures. Communication channels range from interpersonal visits to WhatsApp groups and mobile apps, though adoption varies by region. Coordination between central and state agencies is often weak, resulting in redundant efforts and resource wastage. Extension strategies include farmer field schools, participatory rural appraisal, expert systems, and social media outreach.

Ethical and Legislative Concerns

The ethical landscape of extension education is often overlooked. The absence of a formal accreditation or licensing body leads to discrepancies in professional standards. Some practitioners rely on outdated or unverified information, compromising the credibility of extension services. There are also cases of data misuse, inadequate representation of marginalized communities, and lack of consent in research and feedback collection. Legislative recognition of extension as a profession remains limited, further affecting the morale and legitimacy of extension workers. Addressing these concerns is vital for building trust and inclusiveness in the system.

Emerging Challenges

Extension education in India faces several emerging challenges. Curriculum development lacks national standardization and is slow to adapt to new technologies. The digital divide restricts the use of ICT in remote areas.

Private sector engagement remains minimal, although it has the potential to scale innovation. Institutional coordination is often absent, leading to policy overlaps. Moreover, extension is not always seen as a preferred career option among youth due to inadequate incentives, limited recognition, and job insecurity. These challenges threaten the long-term sustainability and effectiveness of the extension framework.

Recommendations

To strengthen the extension education system, a multipronged approach is required. First, a National Council for Extension Education (NCEE) should be established to regulate curricula, accredit institutions, and certify professionals. Second, digital literacy must be enhanced among extension workers through regular training programs. Third, the convergence of ICAR, SAUs, state departments, NGOs, and private players should be institutionalized through policy mechanisms. Fourth, ethical guidelines and grievance redressal mechanisms should be put in place to ensure accountability. Fifth, professional incentives, career development tracks, and performance-linked benefits should be introduced to attract and retain talent. Finally, curricula should incorporate indigenous knowledge, local dialects, and context-specific content to ensure cultural relevance and accessibility.

Conclusion

The extension education system in India is both indispensable and underutilized. Although it has made significant contributions to rural development, it continues to grapple with structural, pedagogical, and ethical bottlenecks. By adopting a comprehensive systems approach, the strengths and shortcomings of the extension framework become clearer. Addressing these through strategic reforms, digital integration, and ethical governance can elevate the quality and reach of extension education. A robust and accountable extension system is essential not only for agricultural transformation but also for empowering rural communities and ensuring inclusive growth.

References

1. Choudhury B, Mishra A. System analysis in agricultural extension. 2008.
2. Meena MS, *et al.* Curriculum challenges in extension education. *Journal of Extension Education*. 2020;
3. Rao V, Patel A. Need for professional regulation in agricultural extension. *Indian Journal of Extension Systems*. 2021;
4. Kumar N, Mazhar SH, Kumar A. The role of agricultural extension in disseminating the technology of organic farming among greenhouse farmers in India. *International Journal of Agriculture Extension and Social Development*. 2023;6(2):23-27. DOI: 10.33545/26180723.2023.v6.i2a.190
5. Indian Council of Agricultural Research (ICAR). Guidelines for strengthening agricultural extension in India. 2022.
6. Bansal S, *et al.* Ethical dimensions in extension practice. 2023.