



From Fields to Screens: The Role of Mass Media in Transforming Modern Agriculture

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Agriculture is the backbone of the Indian economy and the primary source of livelihood for a large proportion of the rural population. Rapid advancements in agricultural science have resulted in the development of improved technologies related to crop production, animal husbandry, natural resource management and agribusiness. However, the effectiveness of these innovations depends largely on how efficiently they are communicated to farmers. Mass media plays a vital role in the transfer of farm technology by facilitating large-scale, timely and cost-effective dissemination of agricultural information. Traditional mass media such as print, radio and television, along with modern digital tools like mobile phones, internet platforms and social media, have transformed agricultural communication systems. This article discusses the concept, importance, types and impact of mass media in the transfer of farm technology, emphasizing the need for integrating traditional and modern communication channels to strengthen agricultural extension and promote sustainable agricultural development.

Keywords: Mass media; Farm technology; Agricultural extension; Information and Communication Technology (ICT); Technology transfer; Digital agriculture

Introduction

Agriculture has been an integral part of human civilization since the beginning of settled life. From the earliest farming practices to modern precision agriculture, the growth of agriculture has always depended on the availability and effective use of knowledge. The need for agricultural information is therefore as old as agriculture itself. Farmers require continuous and reliable information related to crop cultivation, livestock management, weather conditions, pest and disease control, market trends and government policies to improve productivity and income.

India is an agrarian country where nearly 70 percent of rural households depend primarily on agriculture and allied activities for their livelihood. Over the years, agricultural research institutions have developed numerous improved technologies, including high-yielding varieties, improved animal breeds, efficient irrigation systems, mechanization and climate-resilient practices. Despite these developments, a significant gap still exists between technology generation and its adoption at the field level.

One of the major reasons for this gap is ineffective communication. Agricultural extension services aim to bridge this gap and mass media has emerged as one of the most

powerful tools in strengthening extension efforts. Mass media enables the rapid dissemination of information to a large audience, overcoming limitations such as shortage of extension personnel, geographical barriers and time constraints.

In recent years, the integration of traditional mass media with modern digital communication tools has revolutionized the process of technology transfer. The use of mobile phones, internet services and social media platforms has made agricultural communication more interactive, inclusive and farmer-centric. This article elaborates on the role of mass media in the transfer of farm technology, highlighting its significance, various forms and overall impact on agricultural development.

Concept of Mass Media in Agriculture

Mass media refers to various communication channels that are capable of reaching a large number of people simultaneously within a short period of time. These channels include print media, radio, television and modern digital platforms such as mobile phones, the internet and social media. In the context of agriculture, mass media plays a crucial role in disseminating scientific knowledge, technical know-how and advisory services to farmers and other stakeholders involved in the agricultural value chain.

Agriculture is highly information-intensive and farmers constantly require updated knowledge related to crop production, livestock management, pest and disease control, climate variability, market trends and government policies. Mass media acts as an effective mechanism to transfer such information from agricultural research institutions and extension agencies to farmers in a simplified and understandable manner.

Mass media supports agricultural extension by performing multiple functions that complement interpersonal communication and field-based extension activities. These functions include:

- **Creating awareness about new farm technologies:** Mass media helps in introducing newly developed technologies such as improved crop varieties, modern irrigation methods, integrated pest management practices and advanced animal husbandry techniques to a large number of farmers simultaneously.
- **Educating farmers on improved practices:** Through repeated exposure to extension messages, mass media educates farmers about recommended practices, scientific principles and proper input use, leading to better understanding and informed decision-making.
- **Influencing attitudes and behavior toward innovation:** By showcasing success stories, demonstrations and expert opinions, mass media plays a significant role in shaping farmers' attitudes toward adopting new technologies and reducing resistance to change.
- **Reinforcing messages delivered through interpersonal extension methods:** Messages delivered through farm visits, demonstrations and training programs are reinforced when farmers encounter the same information through mass media, improving recall and adoption.

Overall, mass media acts as a vital link between agricultural research systems, extension agencies, policymakers and farmers. It enables a two-way flow of information where farmers not only receive scientific knowledge but also provide feedback regarding field-level problems, constraints and technology performance.

Importance of Mass Media in Transfer of Farm Technology

The importance of mass media in the transfer of farm technology has increased significantly due to the growing complexity of agriculture and the rising demand for timely and accurate information. Modern agriculture is influenced by factors such as climate change, market volatility and technological advancements, which require farmers to make quick and informed decisions. Mass media is important in agricultural development for several reasons:

- **Reaches a large and diverse farming population at low cost:** Compared to individual farm visits, mass media enables the dissemination of information to thousands of farmers simultaneously, making it a cost-effective extension tool.

- **Enables quick dissemination of time-sensitive information:** Information related to weather forecasts, pest outbreaks, disease warnings and market price fluctuations can be rapidly communicated through mass media, helping farmers reduce risks and losses.
- **Reduces the information gap between researchers and farmers:** Mass media bridges the gap between technology generation and technology adoption by ensuring that scientific innovations reach farmers in an understandable form.
- **Supports decision-making and risk management:** Timely access to reliable information enables farmers to plan cropping patterns, manage inputs efficiently and respond effectively to climatic and market uncertainties.
- **Enhances efficiency of the agricultural extension system:** In situations where extension personnel are limited, mass media supplements their efforts and strengthens the overall extension delivery mechanism.

In regions where direct extension contact is limited due to geographical, financial, or manpower constraints, mass media often serves as the primary and sometimes the only source of agricultural information for farmers.

Role of Traditional Mass Media

Traditional mass media has played a foundational role in agricultural communication for several decades. Despite the emergence of digital platforms, traditional media continues to remain relevant, particularly in rural and remote areas.

Print Media: Print media includes newspapers, agricultural magazines, newsletters, bulletins, leaflets, pamphlets, posters and technical manuals. It is one of the oldest forms of mass media used in agriculture and remains an important source of detailed information.

Role of print media in agriculture:

- **Provides detailed and structured technical information:** Print media allows the presentation of comprehensive information, including production practices, dosage schedules and management guidelines, in an organized manner.
- **Allows repeated reading and long-term reference:** Farmers can preserve printed materials and refer to them whenever needed, which enhances learning and retention.
- **Disseminates success stories and best practices:** Case studies and farmer success stories published in print media motivate other farmers to adopt improved technologies.
- **Enhances understanding of scientific recommendations:** Illustrations, tables and step-by-step explanations help farmers better understand complex agricultural concepts.

In regions such as the Konkan region, where literacy levels are relatively high, print media has considerable potential for transferring farm technology effectively.

Radio: Radio is one of the most effective mass media tools for rural communication due to its wide coverage, affordability and simplicity.

Role of radio in farm technology transfer:

- **Reaches illiterate and semi-literate farmers:** Since radio does not require reading skills, it is particularly useful for farmers with low literacy levels.
- **Uses local languages and dialects:** Agricultural radio programs are often broadcast in regional languages, making the information more relatable and understandable.
- **Provides timely seasonal advisories:** Radio is effective in delivering seasonal information related to sowing, irrigation, pest management and harvesting.
- **Encourages farmer participation through interactive programs:** Phone-in programs, farmer interviews and expert discussions promote two-way communication and farmer engagement.

Community radio stations play a significant role in addressing location-specific agricultural problems and promoting indigenous knowledge.

Television: Television is a powerful medium that combines audio and visual elements, making it highly effective for demonstrating agricultural technologies.

Role of television in agriculture:

- **Demonstrates farming practices visually:** Visual demonstrations of practices such as seed treatment, milking hygiene and equipment operation enhance comprehension.

- **Improves understanding of complex technologies:** Seeing the actual implementation of technologies builds clarity and confidence among farmers.
- **Builds trust in scientific recommendations:** Expert appearances and institutional credibility enhance the reliability of information conveyed through television.
- **Motivates farmers through success stories:** Programs featuring progressive farmers inspire others to adopt improved practices.

Television-based agricultural programs have significantly contributed to technology diffusion and adoption.

Role of Modern and Digital Mass Media

The digital revolution has transformed agricultural communication by enabling real-time, interactive and personalized information exchange.

Mobile Phones: Mobile phones have become an integral part of farmers' lives and are one of the most effective tools for agricultural communication.

Role of mobile phones:

- Provides instant access to agricultural advisories
- Delivers weather forecasts and market prices
- Enables voice-based services for illiterate farmers
- Facilitates direct interaction with experts

Mobile-based services help farmers make timely decisions and improve farm efficiency.

Internet and Web Portals: Internet-based platforms provide access to a vast repository of agricultural knowledge.

Role of internet in agriculture:

- Access to updated research and innovations
- Online training and capacity building
- Availability of digital libraries and databases
- Improved awareness of government schemes

Social Media and Messaging Platforms

Social media has introduced participatory and interactive communication in agriculture.

Role of social media in technology transfer:

- Real-time sharing of field problems
- Peer learning among farmers
- Faster dissemination of advisories
- Strengthened farmer-extension linkage

Integration of Traditional and Modern Media

No single medium can meet all information needs of farmers. Therefore, an integrated communication approach is essential.

Benefits of integration:

- Wider reach and inclusiveness
- Reinforcement of messages through multiple channels
- Better understanding and retention
- Increased adoption of farm technologies

Impact of Mass Media on Agricultural Development

Mass media has a profound impact on farmers and the agricultural sector.

Major impacts include:

- Increased awareness and knowledge
- Higher adoption of improved practices
- Reduced information asymmetry
- Improved productivity and income
- Promotion of sustainable and climate-smart agriculture

Role of Mass Media in Youth Engagement and Sustainability

Mass media plays a crucial role in attracting rural youth to agriculture by presenting it as a modern, innovative and profitable enterprise.

Contribution to youth engagement:

- Promotion of Agripreneurship
- Exposure to Modern Technologies
- Encouragement of Innovation
- Making agriculture knowledge-driven

Although “apps may not plough the fields,” they empower youth to manage agriculture more efficiently, profitably and sustainably.

Conclusion

Mass media plays a crucial role in the transfer of farm technology by bridging the communication gap between agricultural research systems and farmers. Traditional media such as print, radio and television remain important, particularly in rural areas, while modern digital media has enhanced the speed, reach and interactivity of agricultural communication. The integration of traditional and modern mass media strengthens the agricultural extension system, improves technology adoption and contributes to sustainable agricultural development. A well-planned, farmer-centric mass media strategy is essential for achieving long-term agricultural growth and rural prosperity.

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