Received Date: 30 August 2025
Accepted Date: 27 December 2025
DOI: https://doi.org/10.3126/jiaas.v39i1.88280

FROM CONSUMERS TO COMMUNICATORS: REIMAGINING THE ROLE OF YOUTH IN AGRICULTURAL EXTENSION COMMUNICATION- A SYSTEMATIC REVIEW

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ABSTRACT

There is growing recognition for young people as proactive communicators and agents of change within the agricultural communication ecosystem. The transformative role of youth in agricultural extension communication is examined in this study, with particular attention paid to how they might use digital technologies and participatory ways to close the gap between traditional agricultural practices and contemporary advances. The research accesses the present contributions of youths, obstacles to their active involvement, and successful strategies to increase their engagement through a thorough literature analysis. The results highlight how youth-led communication promotes inclusivity and sustainability in agricultural extension programs while also hastening the adoption of innovations. In order to meet the problems of contemporary agriculture, young people may transform the agricultural extension landscape by acting as innovators, educators, and advocates by utilizing their adaptability and technological know-how. To empower youths as communicators in agricultural extension systems, the report ends by suggesting specific strategies as such integrating ICT, providing specialized training, and encouraging policy advocacy.

Key words: *ICT, communication strategies, agriculture extension*

INTRODUCTION

The agriculture sector is undergoing a rapid transformation driven by digitalization, commercialization, climate uncertainty and evolving customer demands. In this dynamic landscape, the youth emerge as the key actor and stakeholder in reshaping agriculture extension communication. Moving past the traditional top-down, one-way approach of information distribution where extension services and knowledge were imparted to passive farmers to this modern aged demand based, technology oriented, bottom up approach (Steinke et al., 2020). The paradigm is slowly changing though, as the value of involving young people as active contributors to the agricultural communication ecosystem is acknowledged. Youths can be seen as key drivers in integration of precision technologies, localized knowledge and innovative research in agriculture extension communication (Unay-Gailhard & Brennen, 2022).

Even though they make up 15% of the world's population, young people/ youths only make up 2% of agricultural workers (Hassan, 2024), basically stating the role of the youths as consumers. In the past, young people were frequently seen as passive consumers of agricultural knowledge, largely relying on extension agents and elders for information. They can ensure that knowledge reaches even the most marginalized farming groups by bridging the gap between modern scientific discoveries and traditional agricultural processes through their proficiency with digital tools and platforms. Youth involvement in agricultural

extension has been shown to increase the effectiveness of information sharing and hasten the adoption of new technology (Food and Agriculture Organization, 2021).

The purpose of this study is to examine how young people currently contribute to agricultural extension communication and assess how they might improve the spread of innovation using contemporary instruments and techniques. It aims to determine which digital platforms and communication channels young people use, assess how well they reach rural communities, and investigate obstacles to their involvement. The research will offer practical suggestions to enable youths as communicators within agricultural extension systems by concentrating on the influence of youth-led communication on the adoption of agricultural technologies.

The transformative potential of youth in upgrading agricultural extension services serves as the justification for this study. Young people are in a good position to close the gap between traditional farming methods and modern agricultural innovations because of their adaptability and familiarity with digital technologies. Their function is yet mainly unexplored and neglected, nevertheless. This study tackles important issues such as the obstacles to adolescent involvement, the resources available to them, and the strategies required to facilitate their shift from passive recipients of information to active communicators. The study enhances the efficacy and inclusivity of agricultural extension programs by looking at these factors.

MATERIALS AND METHODS

This study employed a comprehensive literature review methodology to investigate the role of youth in agricultural extension communication. Academic articles, reports, books, and case studies were collected from peer-reviewed journals, institutional publications, and reputable online repositories including Google Scholar, ResearchGate, and FAO databases. Key words such as *youth in agriculture, extension communication, ICT in extension, participatory communication, and innovation dissemination* were employed to find sources, focusing on publications from 2000 to 2024. Following the elimination of duplicates and irrelevant articles, 46 studies were retained based on their methodological rigour, contextual pertinence, and emphasis on communication rather than solely on production technology. The chosen works underwent thorough theme analysis, revealing consistent trends of digital involvement, youth agri-preneurship, participatory communication, and policy initiatives.

A qualitative case study was included to enhance the secondary findings, concentrating on a youth-led agricultural communication effort that illustrates how young individuals utilize digital tools and participatory methods in practical extension settings. The data for this case were obtained from published project reports, organizational paperwork, and interviews found in secondary sources. The amalgamation of systematic review and case study evidence offered a comprehensive analytical framework and contextual insight into the shift of youth from information consumers to active communicators and innovation agents within agricultural extension systems.

RESULTS AND DISCUSSION

Challenges faced by youths in agricultural communication programs

A number of obstacles prevent young people from actively participating in and contributing to agricultural extension. One major obstacle is still the restricted availability

of resources like credit, land, and contemporary technology. Many young people find it difficult to launch effective extension programs or put innovative methods into action without financial resources or land ownership. This problem is made worse by rivalry from elder generations and restrictive inheritance rules (Proctor & Lucchesi, 2012). Youth involvement is discouraged by negative perceptions towards agriculture and extension as labor-intensive, low-status, and monetarily undesirable. These preconceptions are reinforced by media representations of metropolitan occupations as more glamorous, which discourages young talent (Girdziute, et al., 2022). In addition, many young people are ill-prepared to handle the complexity of today's agricultural concerns due to a lack of contemporary agricultural education and hands-on training. This skills gap, particularly for youth from non-farming backgrounds, limits their ability to engage in extension activities effectively (FAO, 2014).

Current role of youth in agricultural communication

Addressing issues and promoting sustainable agricultural growth require the active participation of rural youths in agricultural extension. By filling in knowledge gaps and encouraging the adoption of creative approaches, youth participation in extension services can greatly boost production and the number of knowledgeable producers. By sharing vital information on better farming practices and resource management, youth-led extension programs can also support food and nutritional security. Furthermore, rural youth, with their vitality and flexibility, can efficiently ease the flow of knowledge to farmers and guarantee the continuation of agricultural extension services when the efficiency of older farmers declines (Khan, Peer, Khuroo, & Farhein, 2023).

According to, Khan et. al.(2023) rural youth are perfect for promoting innovation in extension communication because they are very skilled at embracing and disseminating new ideas, concepts, and technology. By fostering chances for meaningful community engagement, their participation in extension initiatives also helps to combat rural unemployment. Furthermore, because extension programs give young people a feeling of security and purpose in rural settings, they can lessen their migration to metropolitan regions. In addition to using their creative potential, the agricultural sector can fortify rural economies and communities by actively engaging young people in extension activities.

Through focused vocational training in fields like ICT, dairying, beekeeping, organic farming, value addition, and supply chain management, which prepares them for entrepreneurship, youth involvement in agriculture can be increased. Young people can support cutting-edge techniques like high-tech horticulture, IPM, and watershed management by serving as technology agents. Small-scale mechanization and knowledge-based businesses are encouraged by supporting programs like agri-clinics, specialized hiring services, and funding for businesses. Technology dissemination can be greatly aided by farmer cooperatives and SHGs, and new farmers' confidence is bolstered by the designation of pioneering farmers as "Centres of Excellence" (Haryana Kisan Ayog, 2013).

Digital tools and communication strategies

Because we live in a time of the digital revolution and have a youthful population that is creative and tech-savvy, young people can address a wide range of agricultural issues and make better decisions. A paradigm shift in agriculture has been brought about by digital technology, as new farmers may now access information online and utilize ICT to learn how to take care of their crops. Weather forecasting, crop management, and agricultural product

marketing are all possible with these tools. Today's youngsters can access all the information they require with a few clicks and by entering Key words into the internet, unlike past generations who had to rely on professional counsel. These cutting-edge technologies can be used by the younger generation to investigate the many opportunities in the agricultural industry (Chhetri, 2024).

Various ICT-enabled e-extension techniques are used by young, tech-savvy extension officers to connect with farmers rather than contacting them one-on-one. Direct mobile communication to individual farmers, bulk SMS to reach groups of farmers on a database, mobile apps like Facebook and WhatsApp, and exchanging live or pre-recorded agro-advisory audio and video messages are a few examples (Odera, 2014). Young researchers can also use ICTs to shorten the time it takes to provide input on research products, such improved varieties. In addition to promoting collaborative and participative multi-stakeholder research, ICTs have solidified the research feedback mechanism. Farmers are now active stakeholders in this process, from defining the research problems to final results (Maru, 2004). Youth also aid in the adoption of cutting-edge technologies like drones, GPS, GIS, and other precision agriculture tools, which makes modern farming methods easier for traditional farmers to understand and use. (Lohento & Ajilore, 2015).

By using ICT for jobs like traceability, quality assurance, and market linkages, they also help to enhance agricultural value chains, which increases the productivity and profitability of agricultural businesses. Beyond distribution, young people use online forums, seminars, and digital campaigns to promote sustainable agricultural policies and practices, bringing attention to topics like organic farming and climate resilience. Additionally, a lot of young agro-entrepreneurs are creating cutting-edge ICT solutions that improve the effectiveness and reach of extension services, such as mobile-based advice platforms and farm management software. Youth make sure that traditional wisdom and technical innovations are seamlessly integrated by serving as knowledge brokers and bridging generational gaps between elderly farmers and modern agricultural systems. Their advocacy work and business endeavors demonstrate their ability to not only update extension services but also drive sustainable agricultural development (Lohento & Ajilore, 2015).

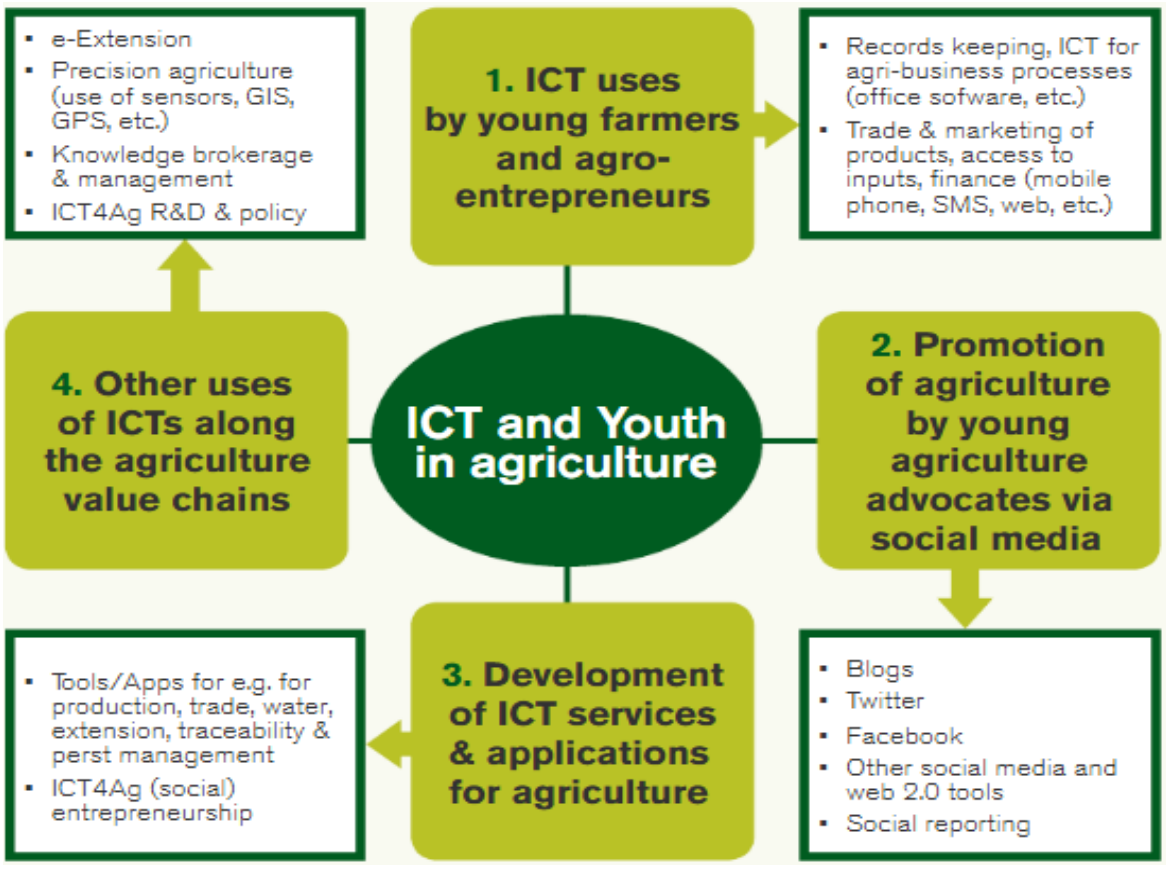

Figure 1: Framework for ICT and youth in agriculture (Lohento & Ajilore, 2015)

Role of youth in innovation diffusion

By acting as entrepreneurs and creating and implementing creative solutions to farming problems, young people play a critical role in the spread of agricultural technology. They use contemporary tools to enhance farm management techniques, run helplines for aspiring farmers, exchange market information, and support training and education via distant learning platforms (USAID, n.d.). Adoption and dissemination of new concepts and technology within their communities are accelerated by young people, who are essential to the diffusion of innovation. Young people help close the gap between invention and its real-world implementation through their aptitude for digital tools, adaptability, and eagerness to learn. Through peer networks, mobile applications, and social media, they actively engage in educating farmers about the market, cutting-edge technologies, and current farming techniques. By encouraging others to embrace change, young people accelerate the diffusion process as early adopters and influencers. Because of their entrepreneurial mentality, they create localized answers to particular problems, making the inventions applicable and easily obtainable. Additionally, channels for knowledge transfer and skill development are established by youth-led training programs and educational initiatives, including distance learning. But for young people to be effective at spreading innovation, they need fair opportunities, supporting policies, and access to resources- especially for marginalized groups like young women. By empowering young people and tackling these issues, their

contribution to the diffusion of innovation can promote technology adoption across industries and sustainable development. (Sebba, et al., 2009).

Strategies for strengthening youth engagement in agricultural communication

Youth's involvement in agriculture extension as communicators is one of the paradigm that needs to be shifted. The average of farmers across the world is 65 years (MacDonald, 2016), and there is a shift that will be obvious shift towards a younger age group. This transition is propelled by the emergence of agripreneurship opportunities, advancements in digital agriculture, and youth-centric agricultural policies that enhance the technological engagement and economic viability of farming for young individuals (Henning et al., 2022; Kote et al., 2024; Pathma et al., 2025). Research demonstrates that mobile platforms, precision technology, and social media facilitate youngsters in closing communication gaps in research, market, and extension, thereby transforming agriculture into an appealing, innovation-oriented enterprise (Kriti & Singh, 2024).

Farmers as well as agriculture communicators will be now lead by the youths. There should be certain reinforcements, certain strategies to improve youth's engagement in agricultural communication. (Chikkalaki, Ghanghas, & Chahal, 2024) Emphasizes educational initiatives and training opportunities should be given top priority in plans to increase young involvement in agricultural communication. By attending to the unique requirements and objectives of young farmers, agricultural extension organizations may equip them with the information and abilities needed to succeed in the industry. Giving young people knowledge about contemporary farming methods, sustainable agriculture, and agribusiness management should be the main goal of these initiatives. Agricultural communication may become more dynamic and inclusive by incorporating digital technologies and interactive approaches into training. The impact of these programs can also be increased by encouraging peer-learning networks and mentorship, which will guarantee that young farmers actively share their knowledge within local communities in addition to embracing novel approaches.

Empowering the young people in agriculture can be emphasized by ICT integration, youth-inclusive value chains, entrepreneurship support, policy advocacy, capacity training, and creative freedom. Youth who get agribusiness and entrepreneurial training can grow into local leaders and communicators who can share market insights and agricultural advances with their communities. By providing real-time access to information and marketplaces, ICT helps close communication gaps. Youth can also influence agricultural policies and disseminate important knowledge through policy advocacy and networking opportunities. When combined, these strategies enable young people to spearhead agricultural change while promoting efficient communication throughout the agricultural value chain (AGRA, 2017).

Targeted strategies in agricultural communication can improve the market connections, entrepreneurship help, and policy advocacy that agricultural extension services provide, all of which greatly increase youth engagement in agriculture. Youth can efficiently enter markets and value chains with the help of extension services, which offer market intelligence, pricing information, and buyer relationships. This is in line with strategies for boosting young involvement, like creating unambiguous lines of contact and publishing market opportunities online. Young farmers can improve their capacity to market their produce, generate more profits, and establish sustainable businesses by using these communication methods to equip them with the knowledge they need to make wise decisions (Paroda, 2019). Additionally,

outreach initiatives and digital communication help disseminate entrepreneurial knowledge, giving young people the tools they need to launch their own businesses.

Furthermore, strategic communication initiatives to involve kids in decision-making processes can strengthen extension services' emphasis on policy advocacy for youth-friendly agricultural policies. The voices of young farmers can be heard by policymakers through the use of social media, forum organization, and content development that emphasizes youth issues. This tactic encourages young people to actively participate in establishing laws that have an immediate impact on their farming endeavors. Communication strategies can improve the relationship between young people and the agricultural sector and empower them to take charge of the changes that impact them by fostering discussion between extension agents, young people, and policymakers (Chikkalaki, Ghanghas, & Chahal, 2024).

Case Study: Youth-led ICT and agri-enterpreneurship initiatives in agricultural extension

A qualitative case study methodology was employed to enhance the systematic review, concentrating on youth-led initiatives that illustrate how young individuals are revolutionizing agricultural extension communication via digital innovation and participatory engagement. Digital Green is a prominent example of a community-oriented ICT initiative that began in India and has subsequently proliferated in other regions of Africa. The initiative utilises participatory video production and screening, enabling young facilitators to document and disseminate local success stories among farmers, thus fostering peer-to-peer learning and promoting the adoption of enhanced techniques. Empirical research demonstrates that the Digital Green model has augmented technology adoption rates by as much as sevenfold relative to traditional extension methods, concurrently creating employment opportunities for rural youth as digital communicators and knowledge intermediaries (Gandhi et al., 2009; FAO, 2021; Dahama & Bhatnagar, 2021). Youth play a crucial role in connecting research institutions, policymakers, and farming communities through participatory communication strategies, converting extension from a unidirectional information transfer process to a collaborative learning system.

Comparable advancements are noted in South Asia and Sub-Saharan Africa, where youth-driven digital platforms and agribusiness initiatives have surfaced as efficacious communication instruments for agricultural change. The Smart Krishi mobile application in Nepal, created by young agricultural entrepreneurs, offers localized information on weather, pest management, and market prices in the Nepali language to over 400,000 users, exemplifying how youth innovation and ICT integration enhance participatory communication and real-time knowledge exchange (Chhetri, 2024; FAO, 2021). Similar initiatives, including the AGRA Youth in Agribusiness Program and USAID's Feed the Future Digital Advisory Projects in Kenya and Ghana, underscore how young professionals utilize mobile platforms, social media, and e-learning modules to disseminate agricultural information, establish market connections, and foster the diffusion of innovation (AGRA, 2017; USAID, n.d.; Henning et al., 2022). These reported projects collectively affirm the transformative capacity of youth-led ICT and agri-preneurship models in redefining agricultural extension as a participatory, inclusive, and innovation-focused communication environment.

CONCLUSION

The involvement of youths in agricultural extension communication signifies a transformative transition from conventional top-down information dissemination to a more

inclusive, participatory, and innovation-oriented methodology. Their participation makes agricultural extension programs more sustainable, responsive, and inclusive by making sure that communication methods better meet the needs of different farming communities. Young people are changing how agriculture is communicated through ICT and entrepreneurship. This is shown by youth-led projects like Digital Green in India, Smart Krishi in Nepal, and digital agribusiness platforms in Kenya and Ghana. These examples show that with the right digital tools, training, and assistance from institutions, young people can effectively share localized knowledge, encourage the spread of new ideas, and make market links stronger. These programs show how important it is for young people to be involved in modern agricultural communication systems. This can lead to more people using new technology and more jobs in rural regions. To fully achieve this promise, policymakers and agricultural groups need to put money into improving digital skills, helping young people start their own businesses, and making policies that include the young generation. Promoting ICT-integrated training programs, building mentorship networks, and recognizing the successes of young people are all ways to get more people involved. By getting rid of things that make it hard for young people to get capital, land, and technology, and by changing the way people think about agriculture as a field of innovation and opportunity, young people may become powerful communicators who drive sustainable agricultural change.

ACKNOWLEDGEMENTS

The first author has contributed about 50% works on conceptualizing/ designing, the second worked on literature review and analysis (about 30%) and the third author has contributed in manuscript writing by providing about 20% time to accomplish this paper.

REFERENCES

AGRA. (2017). *Youth strategy: Empowering youth for agricultural transformation.* Nairobi, Kenya: The Alliance for a Green Revolution in Africa.

Chhetri, S. B. (2024, December 14). *Engaging youth in digital agriculture in Nepal.* Lalitpur, Bagmati, Kathmandu.

Chikkalaki, A., Ghanghas, B. S., & Chahal, P. K. (2024). Youth engagement in agriculture: Role of agricultural extension. *Farm Chronical,* 23–27.

Collins, T. (2016). A youth's right to participate: Implications for international youth protection. *International Journal of Human Rights, 21*(1), 14–46. https://doi.org/10.1080/13642987.2016.1248122.

Dumbiri, D. N., & Ewobor, E. O. (2025). Leveraging on Youth Sensitive Policies for Enhancing Youth Inclination Towards Agriculture in the Era of Economic Uncertainties. *Asian Journal of Vocational Education And Humanities*, *6*(1), 14-20. https://doi.org/10.53797/ajvah.v6i1.2.2025

Food and Agriculture Organization. (2014). *Youth and agriculture: Key challenges and concrete solutions.* Rome, Italy: FAO.

Food and Agriculture Organization. (2021). *Empowering youth in agriculture: A pathway to rural development.* Rome, Italy: FAO.

Girdziute, L., Besuspariene, E., Nausediene, A., Novikova, A., Leppala, J., & Jakob, M. (2022). Youth's (un)willingness to work in agriculture sector. *Frontiers in Public Health, 10,* 1–11. https://doi.org/10.3389/fpubh.2022.937657

Halton, C. (2023, December 11). *Diffusion of innovations theory: Definition and examples.* Liberty Street, New York, United States of America.

Haryana Kisan Ayog. (2013). *Young farmers experiences on livelihood opportunities for farm youth in livestock farming—Moving beyond livestock production.* In *Opportunity for youth in agriculture* (pp. 14–16). Haryana, India: Department of Agriculture, Haryana Indian Council of Agricultural Research.

Hassan, T. (2024, October 2024). *Youth in agriculture.* United States.

Henning, J. I. F., Jammer, B. D., & Jordaan, H. (2022). Youth participation in agriculture, accounting for entrepreneurial dimensions. *Southern African Journal of Entrepreneurship and Small Business Management, 14*(1), 1–10. https://doi.org/10.4102/sajesbm.v14i1.461

Kaur, A. (2022). Agricultural communication: A theoretical perspective. *International Journal of Advanced Mass Communication and Journalism, 3*(1), 73–77.

Khan, S., Peer, Q. J., Khuroo, B., & Farhein, H. (2023). Rural youth in agriculture. In S. R. Singh (Ed.), *Advances in agricultural extension* (pp. 83–98). New Delhi, India: AkiNik Publications.

Kote, P., Yallappa, M., Jabeen, A., et al. (2024). A scoping review on youth participation in agriculture: Sustainable development, food security, and economic growth. *Journal of Scientific Research and Reports, 30*(5), 2012. https://doi.org/10.9734/jsrr/2024/v30i52012

Kriti, K., & Singh, A. (2024). Assessing the role of policy in addressing the challenges faced by youth engaging in agriculture: An imperative study from Muzaffarpur district of Bihar. *Towards Excellence, 16*(3), 23–38. https://doi.org/10.37867/te160323

Lohento, K., & Ajilore, O. (2015). ICT and youth in agriculture. In *Africa agriculture status report 2015* (pp. 118–142). Nairobi, Kenya: AGRA.

MacDonald, S. (Director). (2016). *Age of the farmer* [Motion picture].

Mampane, S. (2019). Youth development through participation in decision making: A case of South Africa. In J. Kurebwa & O. Dodo (Eds.), *Participation of young people in governance processes in Africa* (pp. 35–53). New York, United States: IGI Global. https://doi.org/10.4018/978-1-5225-9388-1.ch003

Maru, A. (2004, April 27). *ICT/ICM in agricultural research and development: Status in Sub-Saharan Africa.* Ghana.

Odera, O. J. (2014, June 12). Kenya rolls out e-extension to improve agriculture. Retrieved from https://www.biztechafrica.com/article/kenya-rolls-out-e-extension-improve-agriculture/

Paroda, R. (2019). Motivating and attracting youths in agriculture. *Indian Journal, 8*(3), 149. https://doi.org/10.5958/2319-1198.2019.00011.3

Pathma, P. K. S., Ramasubramanian, M., Krishnan, R., Kumar, M. S., & Saravanakumar, V. (2025). Global perspectives on youth participation in agriculture: A bibliometric analysis and literature review. *Plant Science Today, 12*(7). https://doi.org/10.14719/pst.9485

Proctor, F. J., & Lucchesi, V. (2012). *Small-scale farming and youth in an era of rapid rural change.* Edinburgh, Scotland: IIED.

Rogers, E. M. (1962). *Diffusion of innovation.* New York, United States: Macmillan Publishing.

Sebba, J., Griffıths, V., Luckock, B., Hunt, F., Robinson, C., & Flowers, S. (2009). *Youth-led innovation: Enhancing the skills and capacity of the next generation of innovators.* London, United Kingdom: National Endowment for Science, Technology and the Arts.

Unay-Gailhard, İ., & Brennen, A. (2022). Youth and agricultural innovation systems: Opportunities for participatory knowledge co-creation. *Journal of Rural Studies, 94,* 152–160.

USAID. (n.d.). *Youth, agriculture, and technology.* Retrieved from https://www.youthpower.org/youthpower-issues/topics/youth-agriculture-and-technology

Yadav, V., & Mishra, A. (2020). Extension communication methods and strategies. In S. R. Singh (Ed.), *Advances in agricultural extension* (pp. 43–57). New Delhi, India: AkiNik Publications.