**CHAPTER-19**

# YOUTH ENGAGEMENT IN DIGITAL AGRICULTURE

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## Abstract

This study on youth engagement in digital agriculture was conducted using a primary data collection approach through a structured online survey to explore how young people interact with digital technologies in agriculture and the Agri-food system. The study targeted researchers, students, and young professionals and yielded 65 valid responses collected purely for research purposes. The socio-demographic profile shows that almost 60% of respondents were aged 20 to 25 years, 56.9% of the respondents were female, 80% were students followed by 16.9% researchers. In terms of technology use, mobile applications were the most commonly used digital tools for agrifood system activities, mainly for weather, climate information and communication or networking. The major issue faced was poor internet connectivity at 43.1%. Key benefits experienced using digital technology included better decision making (63.1%) followed by access to knowledge and time saving. For future improvements, 60% of respondents wanted affordable digital tools, followed by 49.2% seeking government support and policy intervention. The biggest barrier in developing technology was lack of funding, reported by nearly 50% of the respondents. Personal experience emerged as the main inspiration for developing future technologies, and mentorship was the top resource needed, followed by access to technology. About 40% agreed that digital technologies encourage engagement in the agrifood system, with AI tools (29.2%) and social media (23.1%) being the most influential. Additionally, 53.8% used digital tools for decision making, and 33% felt knowledge sharing was the key benefit of engaging other youth through digital technologies. key challenges in engaging youth in decision-making is the Lack of interest which accounts for 40%. The study suggests that youth are willing and already active, but the ecosystem around them needs to be strengthened to turn interest into sustained innovation and impact in the agrifood system.

**Keywords**: Youth engagement, Digital Agriculture, Agrifood system, AI tools, Sustained innovation

## 1. Introduction

Youth engagement is a vital aspect of transforming Agri-food systems. As a diverse group in the transitional stage between childhood and adulthood, young people bring unique perspectives and innovative abilities that are essential for tackling the current challenges faced by these systems. Their participation not only introduces novel approaches to sustainability, food security, and rural development but also ensures that the trajectory of Agri-food transformation is inclusive, adaptive, and future-oriented. The term "youth" does not have a precise or particular definition but typically refers to individuals between the ages of 15 and 24 (UNESCO, 2019) or 15 and 35 (African Union, 2006). Such a period is marked by increased responsibility and independence in terms of decision-

making and involvement in endeavors. Consequently, youth roles in agrifood systems evolve. Youth may change their consumption patterns, become economically active as producers or distributors, and influence others' food choices and behaviors (Glover and Sumberg, 2020). Youth engage in transforming agrifood systems in various ways. For example, they can be involved in entrepreneurial endeavors, such as initiatives like the World Food Forum (WFF) Youth Food Lab, and they can influence decision-making processes, such as through the Act4Food initiative (WFF, 2024). As "agents of change", youth can contribute to the transformation of agrifood systems through various engagements including their livelihoods, social movements and collective networks (HLPE, 2021).

Technology in agrifood systems is defined by Alexandrova-Stefanova et al. (2023) as, "the application of science and knowledge to develop techniques to deliver a product or service that enhances the sustainability of agrifood systems." Technology is critical to advancing agrifood systems transformation and has contributed to major improvements in agricultural productivity, nutrition and livelihoods over the last century (Herrero et al., 2020). This has been achieved through various mechanisms, including advances in mechanization, genetic engineering and food safety.

Digital technologies refer to technologies which process, store and transmit information in digital, i.e. binary, format (zeroes and ones) (Pullen et al., 2009). Devices that fall within the category of digital technologies used in Agri-food systems include robotics, sensors, and information and communication technologies (ICTs). Digital technologies in agriculture encompass a wide range of tools that enhance efficiency, precision, and sustainability. Sensors are devices that collect data such as soil pH or material composition, supporting farmers in precision farming. Robotics refers to steered technologies that can be programmed or controlled to automate tasks, reducing manual labor. Remote sensing technologies, including drones and satellites, enable the collection and processing of geographic and environmental data, helping monitor environmental health at both small and large scales. ICTs (Information and Communication Technologies) facilitate communication and knowledge exchange among farmers, allowing them to share insights on crop production and products. Blockchain technology provides a transparent, immutable ledger that records data along supply chains, ensuring traceability and supporting certification standards. Finally, Artificial Intelligence (AI) technologies replicate human intelligence and can be applied to recognize and manage diseases, weeds, and pests, thereby improving crop health and productivity. Together, these innovations empower farmers to make informed decisions, streamline operations, and contribute to more resilient Agri-food systems.

Youth are more likely to use and adopt digital technologies than older generations (Taylor, 2018). A study (Akter and Tan., 2023) found that educated youth in Bangladesh were more inclined to adopt Agri based mobile apps that provide information on crop production and pest control. Additionally, digital technologies provide valuable information to those within the Agri-food sector. For instance, courses to support agricultural production delivered online are available to farmers (Xiuling et al., 2023). Digital technologies create opportunities for young individuals to engage in entrepreneurship within the Agri-food sector. They can support the establishment of businesses and foster economic development through platforms such as e-commerce and mobile applications for farm management. Additionally, they can simplify the undertaking of precision farming, vertical farming and weather forecasting, relevant to various Agrifood systems ventures (Ninson and Brobbey, 2023).

There are significant disparities in digital technology accessibility among young people. Digital tools are not equally accessible to all due to the heterogeneity of the youth demographic (Forney et al., 2023). The term "digital inclusion gap" here refers to the gap between individuals, households and geographic areas at different socioeconomic levels with regards to both their opportunities to access information and technologies, and their use of technologies for a wide variety of Agrifood systems activities (OECD, 2023). This includes differences in technology coverage and adoption in rural and urban areas (Vassilakopoulou and Hustad, 2023). This gap pertains not only to physical access to technologies but also to the educational resources necessary for youth to adopt these tools (Ninson and Brobbey, 2023). Exclusion from these opportunities is due to various barriers, including lacking financial resources, limited access to digital tools and low digital literacy (UN Women, 2020). To enhance the effective utilization of digital technologies, it is crucial to advance network infrastructure, including improving connectivity and expanding broadband coverage. Additionally, attention must be given to aspects of social and political infrastructure, such as enhancing technology access in schools and public institutions, providing comprehensive technology education and training, supporting ICT initiatives for small businesses and addressing the needs of rural areas. Increased government expenditure on digital technologies is also essential for fostering these improvements (OECD, 2023). Moreover, access to digital technology remains limited for women, especially in developing countries. As of 2020, internet usage among women was 12 percent lower than that of men (ITU, 2021). Although this gap has narrowed in most regions since 2013, it has widened in Africa, where in 2017 women were 25 percent less likely to use the internet compared to men (ITU, 2017). In rural areas, the gender gap in mobile phone ownership has widened due to inadequate access to basic infrastructure and services (IRRI, 2023). For instance, 327 million fewer women than men owned smartphones and had access to mobile internet (Meunier et al., 2022). Simultaneously, digital tools can enable women farmers to increase efficiency, participate in decision-making, improve food security and create new entrepreneurship opportunities (IRRI, 2023; CABI, 2023; WFF, 2024). Initiatives like the Global Network of Digital Agriculture Innovation Hubs launched by FAO (2024) aim to establish in-country innovation hubs supporting farmers and value chain actors (particularly youth and women), in adopting digital innovations.

Digital technologies are used in specific research endeavors and entrepreneurial efforts by youth to address various challenges of Agri-food systems transformation. Firstly, digital technologies such as AI are used by youth to increase food production and improve food security  a necessity for agrifood systems transformation (Dengerink et al., 2022). For example, Agro2o is a youth-led company using AI to enhance crop productivity in India. Agro2o is powered by machine learning and AI algorithms that allow higher yields, faster production, and efficient cost and resource utilization. Agro2o empowers individuals and businesses to cultivate their own fresh, nutritious food in cities, thus reducing reliance on long-distance transportation while promoting local food knowledge and sustainability. Furthermore, various combinations of digital technologies are being used by youth in student projects aimed at developing practical solutions toward agricultural challenges. For example, initiatives like Science and Technology Backyard (STB) combine digital technologies to improve efficiency in production and productivity amongst agriculturists. STB initiatives have led to notable outcomes for smallholder farmers, such as increases in crop yields and improved water-use efficiency (Jiao et al., 2019). On a socioeconomic level, the transformation of our Agri-food systems should also involve the enhancement of the livelihoods of those working within them (Environmental Defense Fund et al., 2023). Digital technologies can reduce management difficulties and increase economic benefits for those employed in the Agri-

food sector (Torero, 2021). This includes digitally enabled marketplaces (e-platforms) for agricultural products that can shorten value chains, allow access to new markets and lower transaction costs (World Bank Group, 2019). One example of such a platform being used by youth is Impact Terra. In this background, the current study understands the importance of youth engagement in digital Agriculture with its background literature, the methodology used, and results.

## 2. Brief Background Literature

Ayamga et al., (2023) in their qualitative case study on Africa Goes Digital (AFGD) examined how digitalization is creating opportunities for African youth enterprises in agriculture and fostering collaboration among organizations. The study highlighted the important role of the Technical Centre for Agricultural and Rural Cooperation ACP-EU (CTA) in promoting digital agriculture by providing drone technologies and training support, which eventually contributed to the establishment of AFGD. The findings revealed that member enterprises mainly focused on providing digital and drone-based agricultural services to farmers across Africa. The consortium also served as a community of practice where members used mobile and social media platforms such as WhatsApp for communication and knowledge sharing, and Twitter for networking, sharing success stories, and developing partnerships for projects with governments and development agencies. However, the study identified several challenges, including restrictive drone regulations in some countries and the high cost of drones and sensors. Overall, the study emphasized that digitalization could strengthen youth participation in agriculture, improve institutional collaboration, and support African governments in achieving sustainable agricultural development goals.

Hasan et al. (2022) conducted a study at Malikussaleh University examined agricultural student's perceptions of digital farming and smart farming and found that millennials, as active internet users, have strong potential to become early adopters of digital technologies in agriculture. The study highlighted that digitalization could improve agricultural monitoring, marketing, technology adoption, and production efficiency. However, low digital literacy among older farmers, negative perceptions about agriculture, and limited awareness of smart farming remain major challenges. The findings emphasized the need to strengthen digital skills and awareness among agricultural students and youth to support sustainable and technology-driven agriculture.

Mambang et al. (2022) conducted a study from Indonesia examined the role of digital technology and social media in increasing youth interest in agriculture. Using content analysis and interviews with young respondents, the study found that digital platforms, especially YouTube and Internet of Things (IoT)-related agricultural content, positively influenced youth engagement in farming. Prestige and social recognition emerged as the strongest motivating factor among respondents. The findings highlighted that digital technology and online agricultural content create opportunities for innovation, awareness, and greater participation of young people in sustainable agriculture.

Hasan et al. (2023) in their study highlights the growing importance of digital literacy and smart farming among millennial agricultural students and alumni. It explores how increasing internet use and youth participation in agriculture create opportunities for adopting digital farming technologies. The findings reveal that millennials at Malikussaleh University are active internet users with strong potential to become early adopters of digital agriculture, helping improve monitoring, marketing, and production processes. However, challenges such as limited digital literacy among older farmers and the continuing stigma that agriculture is only for the less educated

still persist. The study concludes that strengthening digital farming awareness and maximizing smart farming implementation are essential steps toward achieving sustainable Agriculture 4.0.

Kumar et al. (2023) conducted a study and mentioned Agricultural youth, typically aged 18–35, play a vital role in shaping the future of agriculture through their energy, innovation, and adaptability. Social media platforms such as YouTube, Instagram, Facebook, Twitter, and LinkedIn have become powerful tools for sharing agricultural knowledge, promoting sustainable farming practices, and encouraging collaboration among young farmers worldwide. These platforms support continuous learning, networking, marketing, and advocacy for climate resilience and sustainable agriculture. Additionally, the integration of technology and agriculture has inspired innovation and entrepreneurship, enabling youth to connect with experts, attract investors, and expand opportunities in modern farming.

Yang et al. (2024) examines how farmer's participation in the digital economy influences the adoption of Ecological Agricultural Technologies (EATs) in China. Using data from 2,825 grain farmers collected through the 2020 China Rural Revitalization Survey, the study analyzes participation in digital production, digital sales, and digital finance. The findings reveal that involvement in the digital economy significantly increases farmer's adoption of EATs, thereby supporting sustainable agriculture and environmental protection. The study further shows that digital sales and digital finance improve EAT adoption by enhancing access to agricultural machinery services, increasing information availability, and strengthening food safety awareness, while digital production mainly promotes adoption through greater use of machinery services. The positive effects are stronger among farmers with higher digital literacy and larger landholdings, highlighting the importance of digital inclusion in achieving sustainable agricultural development.

Sadiq et al. (2025) mentioned that Digital marketplaces for farm products are emerging as an important tool for transforming agricultural value chains and empowering youth in agribusiness. By connecting farmers directly with consumers and buyers, these platforms improve market access, increase price transparency, and reduce dependence on intermediaries. The review highlights that youth are actively utilizing digital technologies and online marketing platforms to create innovative agribusiness opportunities, enhance incomes, and generate rural employment. Findings from different case studies show that digital marketplaces contribute to supply chain efficiency, financial inclusion, and entrepreneurial development among young farmers. However, challenges such as poor digital infrastructure, limited digital literacy, and inadequate policy support continue to affect their large-scale adoption. Overall, the study concludes that strengthening digital ecosystems and supporting youth-centered agribusiness initiatives can significantly promote sustainable agricultural development.

## 3. Methodology

This methodology section describes a primary data collection approach using a structured online survey to explore youth engagement with digital technologies in agriculture and agri-food system transformation. The study targeted students, researchers, and young professionals, yielding 65 valid responses collected purely for research purposes. A concise questionnaire was developed with closed ended (multiple-choice) and open-ended questions to capture both quantitative trends and qualitative insights. Key thematic questions include socio –demographics, digital technology usage, challenges faced, perceived benefits, desired improvements, personal innovations, engagement motivations , and youth collaboration. The questionnaire was distributed online (e.g., via Google Forms) to ensure accessibility, with ethical considerations.

## 4. Result and Discussion

### 1. SOCIO-DEMOGRAPHICS

The pie chart represents the age distribution of 65 respondents in the study. The majority of respondents (60%) belong to the 20–25 years age group, indicating that most participants are young adults. The second largest group is 26–30 years, accounting for 33.8% of the respondents. Only a small proportion of respondents are below 20 years and above 30 years, showing limited participation from these age categories. Overall, the data suggests that the study mainly reflects the opinions and experiences of youth in the 20–30 years age range.

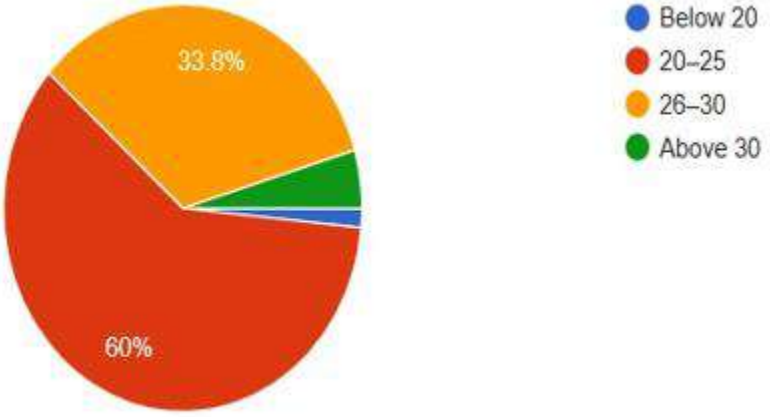


**Figure 1: Age of respondents**

The pie chart illustrates the gender distribution of the respondents included in the study. Female respondents constitute the majority with 56.9%, while male respondents account for 43.1% of the total participants. There were no respondents in the "Other" gender category. The findings indicate that the study had slightly higher participation from females compared to males.

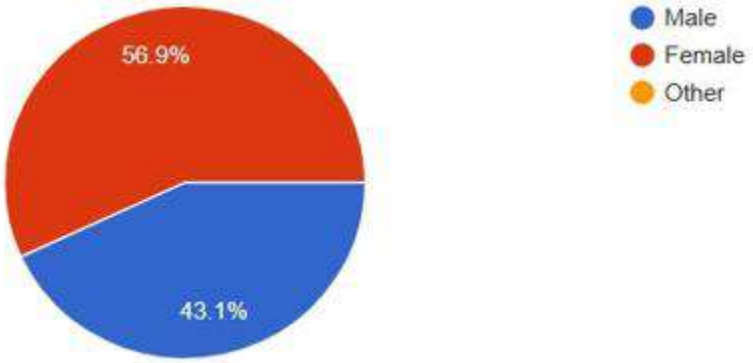


**Figure 2: Gender of respondents**

The pie chart presents the occupational distribution of the respondents in the study. A large majority of the respondents (80%) are students, indicating that students formed the primary participant group. Researchers account for 16.9% of the respondents, while only a very small percentage belong to the categories of Agripreneurs and others. There were no respondents from the farmer and extension worker categories. The findings show that the study mainly reflects the perspectives of students, with limited representation from other occupational groups.

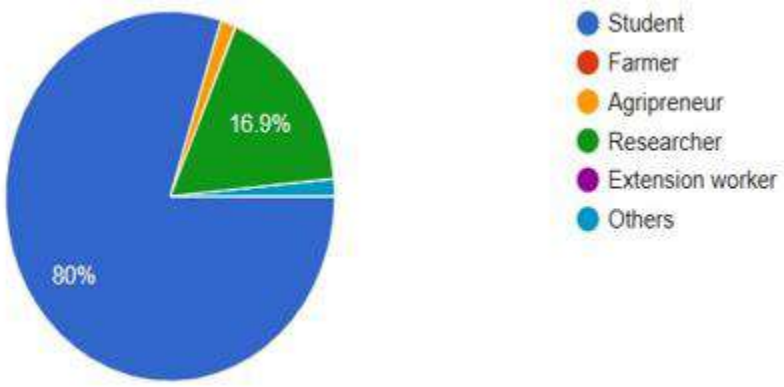


**Figure 3: Occupation of respondents**

## 2. Digital Technologies Used in Projects and Activities for Agri-Food System Transformation

The chart illustrates the digital technologies used by respondents in their projects and activities related to agri-food system transformation. Among the 65 respondents, mobile applications are the most commonly used technology, with 70.8% reporting their use. This indicates that mobile-based tools play a significant role in accessing agricultural information, communication, and service delivery. Social media platforms are the second most widely used technology, utilized by 50.8% of respondents for networking, knowledge sharing, marketing, and awareness creation.

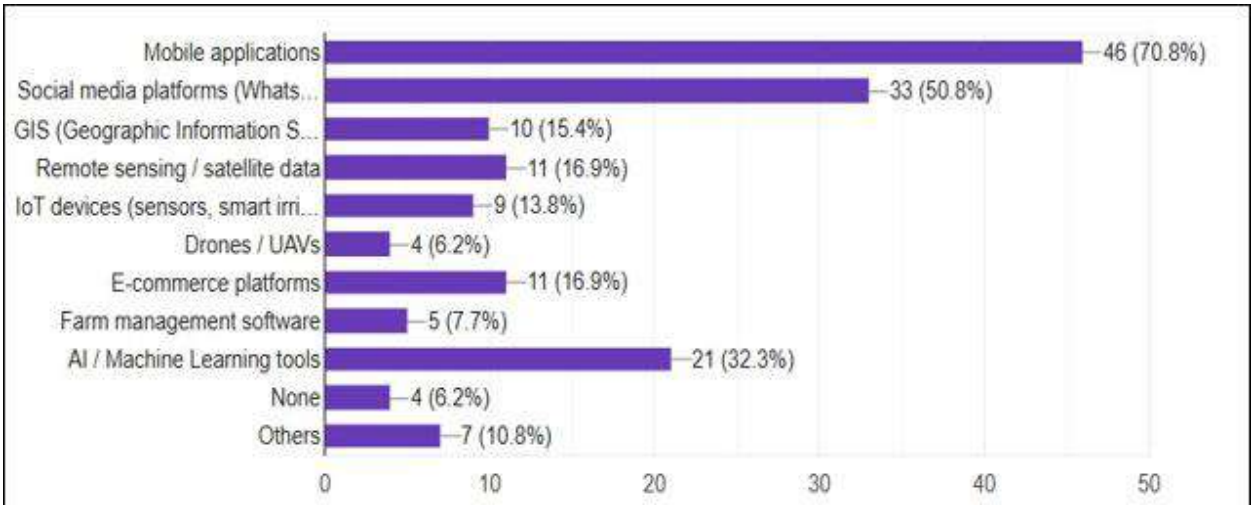


**Figure 4: Digital technologies used**

AI and Machine Learning tools are used by 32.3% of respondents, showing increasing interest in advanced technologies for data analysis, decision-making, and precision agriculture. GIS and remote sensing/satellite data are used by 15.4% and 16.9% of respondents, respectively, reflecting moderate adoption of spatial and monitoring technologies in agricultural activities. Similarly, e-commerce platforms are used by 16.9% of respondents to support online marketing and trading of agricultural products.

The use of IoT devices, such as sensors and smart irrigation systems, was reported by 13.8% of respondents, while farm management software and drones/UAVs are used by only 7.7% and 6.2%, respectively. A small proportion of respondents (6.2%) reported not using any digital technologies, while 10.8% mentioned using other tools.

Overall, the findings suggest that simple, accessible, and communication-oriented technologies such as mobile applications and social media dominate digital engagement in Agri-food system transformation, whereas more advanced technologies like drones, IoT, and GIS are still in the early stages of adoption among respondents.

## 3. Usage of digital technology

The data indicates that respondents prioritize digital technologies primarily for gathering information and maintaining social connections, as "weather and climate information" and "communication/networking" each serve 49.2% of the group. This trend continues with a strong focus on educational and economic empowerment, where 43.1% of respondents use digital tools for "training and learning" and 41.5% rely on them for "market price information". 30.8% uses digital technology for financial services such as payments indicating the reliance of digital tools for critical economic activities. A significant portion of respondents uses digital technology for selling products online (29.2%), for crop monitoring (26.2%), pests and diseases management purposes (23.1%) and nearly 20% of the respondents uses digital technology for soil analysis. Conversely, direct operational and administrative tasks such as "farm record keeping" see significantly lower engagement at 12.3%, suggesting that while digital tools are highly valued for awareness and connectivity, their integration into systematic farm management remains a secondary focus.

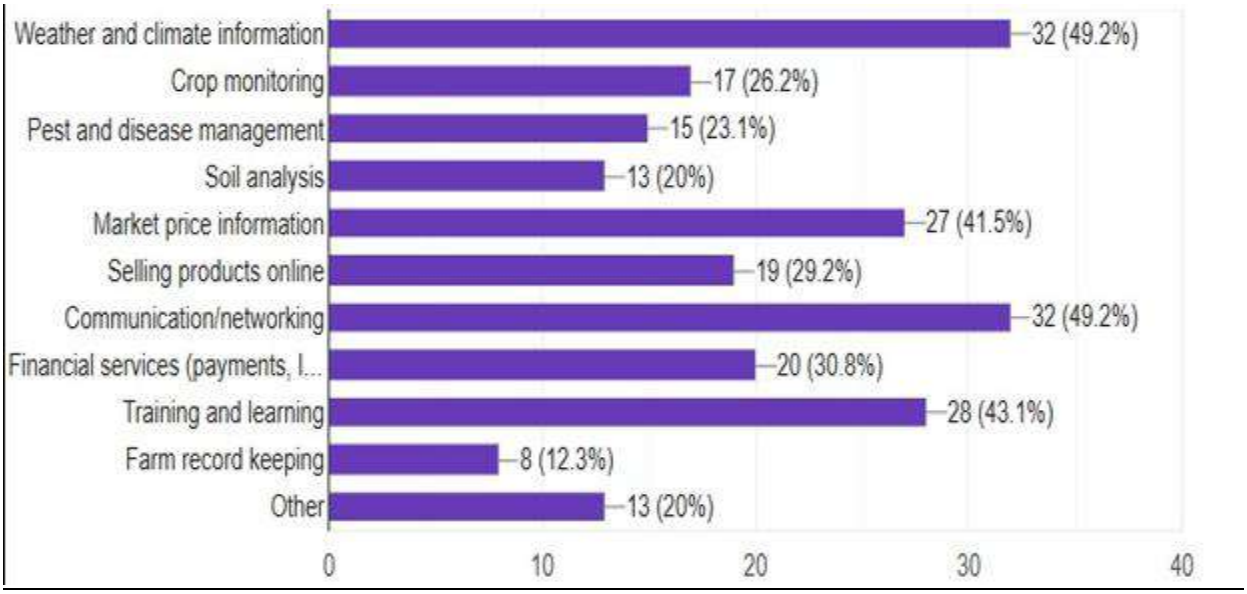


**Figure 5: Usage of digital technology**

## 4. Issues faced while using digital technology

A survey of respondents revealed several key challenges faced while using digital technology. The most prominent issue was poor internet connectivity, reported by 43.1% of participants. This was followed by two equally significant barriers: high cost of technology and data privacy concerns, each cited by 33.8% of respondents. Limited access to devices affected 27.7%, while, lack of training was noted by 24.6%. Inaccurate information troubled 23.1% of users, and lack of technical support was a problem for 21.5%. Skill-related gaps were also evident, with 18.5% reporting lack of technical skills. Less frequent but still notable issues included resistance to adoption at 9.2%, language barriers at 7.7%, and other miscellaneous problems at 16.9%. Based on your data, here's

a cohesive paragraph explaining what it suggests not point by point, but as one connected insight. The survey results suggest that even when people want to engage with technology, they are hindered by unreliable infrastructure, economic constraints, and insufficient guidance, creating an environment where digital inclusion remains out of reach for many despite general openness to adoption.

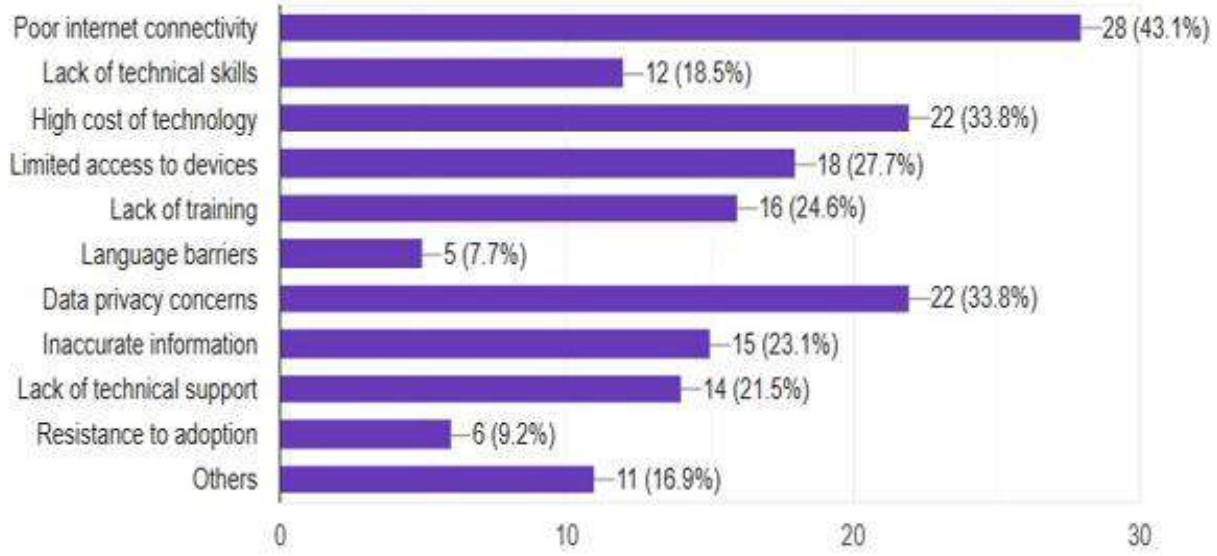


**Figure 6: Issues faced while using digital technology**

## 5. Benefits experienced when using digital technology

The provided bar chart highlights several key benefits of using digital technology, with the most significant impact seen in better decision making (63.1%), Time saving (58.5%), and ultimate access to knowledge (53.8%). Increased productivity was noted by 52.3% of respondents. In terms of communication and operations, improved communication was cited by 36.9% and cost reduction by 29.2%. The same proportion, 29.2%, also reported improved market access. High income as a direct benefit was experienced by 18.5%, while better management was noted by 16.9%.

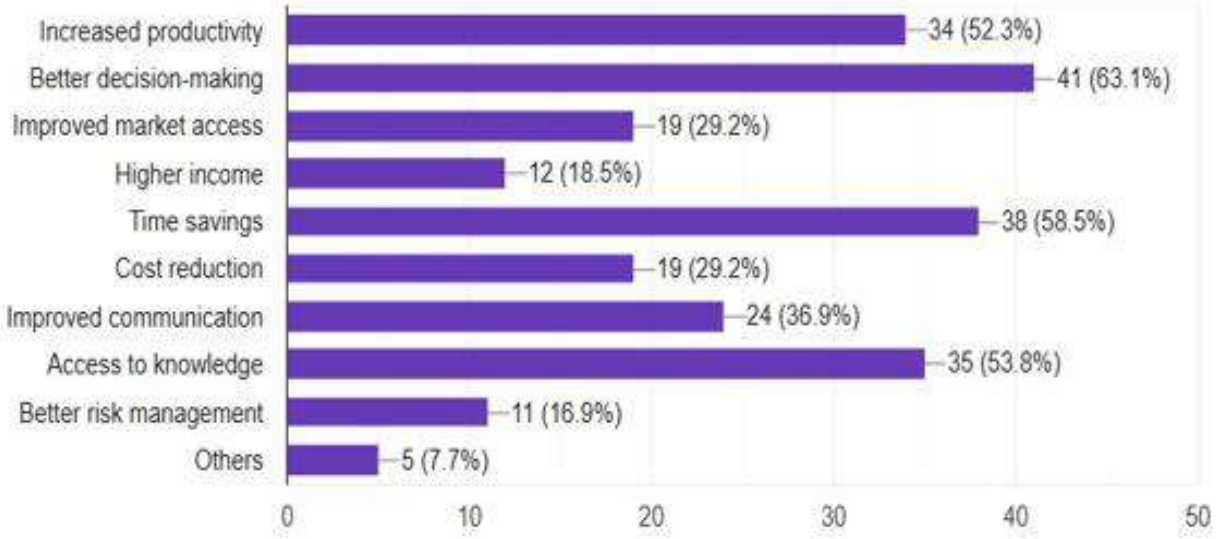


**Figure 7: Benefits experienced using digital technology**

Additionally, 7.7% of respondents mentioned other benefits. The data signifies that digital technology is primarily valued as a tool for smarter and faster work, not just for earning more. With over 60% reporting better decision making and more than half seeing time savings, productivity, and access to knowledge, it shows that the biggest impact is on efficiency and informed action. While financial gains like high income and market access are present, they are secondary to the operational and cognitive benefits. Overall, this suggests that digital technology is transforming how people think, work, and manage information, with economic benefits flowing as a result of improved processes rather than being the main driver.

## 6. Improvements to see future

Respondents highlighted several key improvements they want to see in digital technology going forward. The most demanded change was affordable digital tools, cited by 60% of participants. This was followed by government support and policies at 49.2% and better technical support at 38.5%. More training programs were sought by 36.9%, while reliable data systems were important for 33.8%. Better interconnectivity was mentioned by 32.3% of respondents. Other notable improvements included integrated platforms at 24.6%, access to funding at 21.5%, and local language applications at 20%. Additionally, 10.8% of respondents mentioned other improvements. The data suggests that future digital growth depends heavily on making technology affordable and backed by strong institutional support. With 60% respondents asking for cheaper tools and nearly half wanting government policies, users are signaling that cost and policy gaps are the main limits to wider adoption. The demand for technical support, training, and reliable systems also shows that people don't just want access they want usable, sustainable digital environments with guidance.

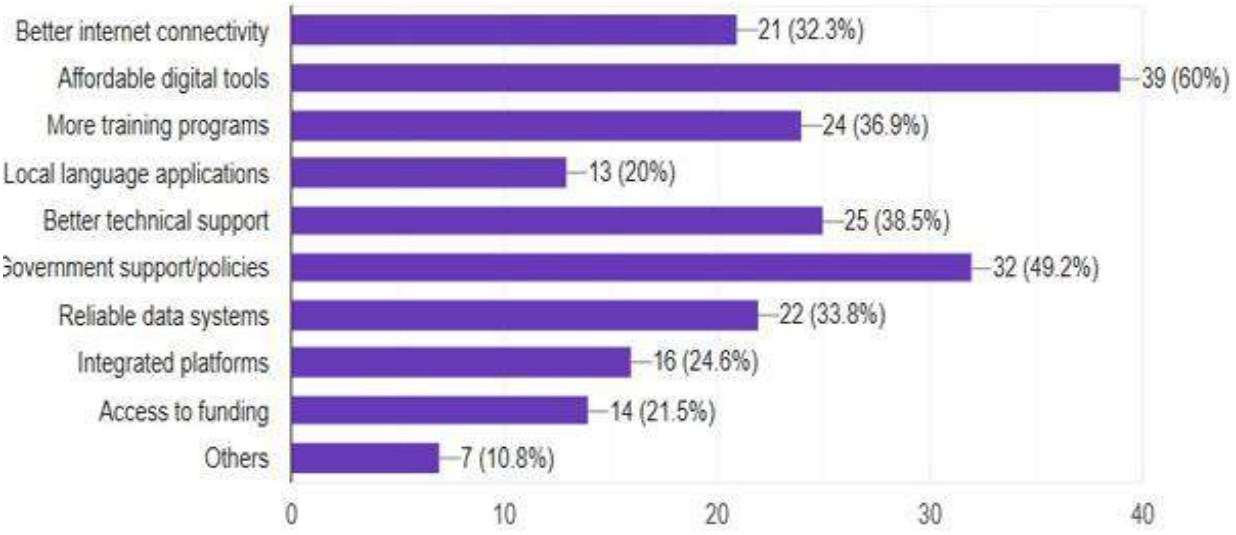


**Figure 8: Improvements respondents like to see in future**

## 7. Barriers faced by respondents in developing the technology

Based on the chart, the most significant barrier to technology development is a lack of funding, cited by half of all respondents (50%). Technical challenges and a lack of skills also represent major hurdles, impacting 31.6% and 23.7% of developers, respectively. Other notable obstacles include limited infrastructure (21.1%), alongside policy/regulatory issues and market access challenges, which both affect 15.8% of participants. Furthermore, 34.2% of respondents identified

various other specific challenges, indicating that the path to innovation is complicated by a wide range of secondary factors.

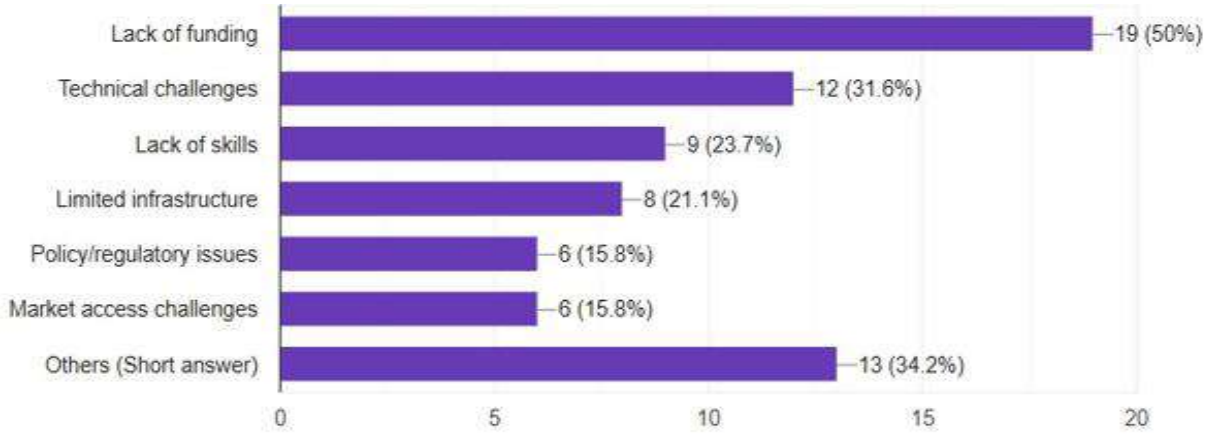


**Figure 9: Barriers faced by respondents in developing technology**

## 8. Inspiration to develop future technology

Based on the survey data, respondents identify several key inspirations for future technological development. Personal experience stands out as the most significant specific motivator, influencing 31.6% (12) of participants, closely followed by market demand at 28.9% (11). Academic or research work and government initiatives also serve as important catalysts for 21.1% and 15.8% of respondents, respectively. While peer influence has the smallest impact at 5.3%, a large portion of the group (44.7%) cited various unique "other" reasons as their primary inspiration.

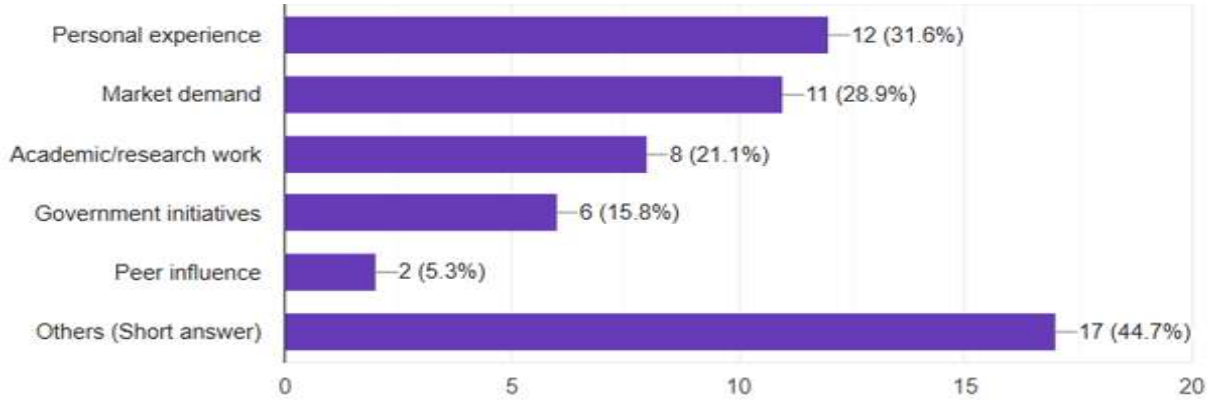


**Figure 10: Inspirations to develop future technology**

## 9. Resources that should support development process

Based on the survey results, respondents identified several key resources essential for their development process. The most significant category was "Others" (34.3%), followed closely by Mentorship at 31.4%. Access to technology was another prominent requirement for 22.9% of participants. Financial support and training programs were equally valued, each garnering 20% of the responses. Finally, institutional support and networking opportunities were highlighted as necessary resources by 17.1% of the respondents.

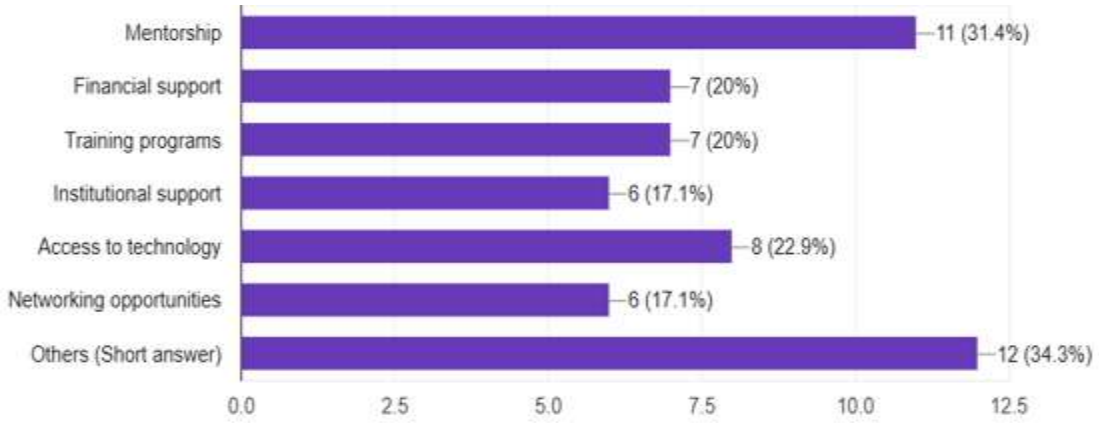


**Figure 11: Resources that should support development process**

## 10. Did digital technologies encourage engagement in Agri-food systems transformation?

Based on the survey data regarding whether digital technologies encouraged engagement in Agri-food systems transformation, a significant majority of respondents reported a positive influence. Specifically, 40% stated "Yes," while another 38.5% felt it encouraged them "To some extent." Combined, these figures indicate that nearly 78.5% of participants found digital tools to be a motivating factor in their involvement. Conversely, only 21.5% of those surveyed indicated that these technologies did not encourage their engagement.

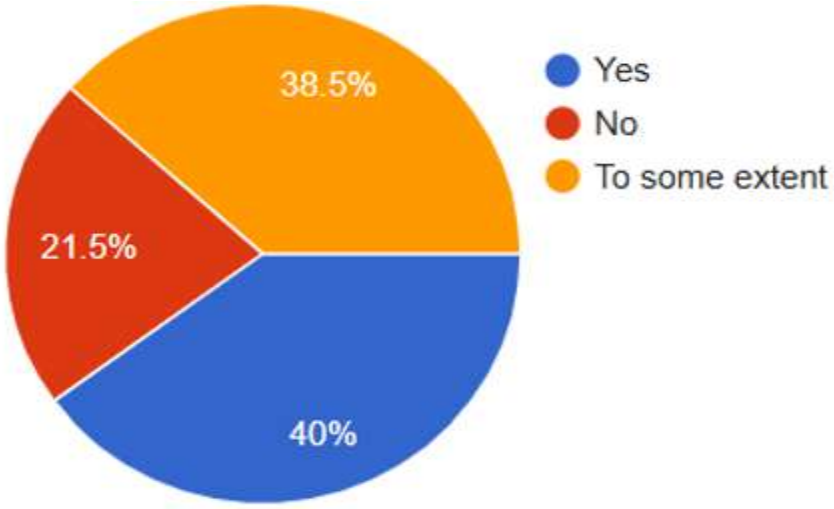


**Figure 12: Digital technology encouragement in Agrifood system**

## 11. Digital technologies that encouraged engagement in Agrifood system

The data reveals that AI tools are the most significant driver of engagement, accounting for 29.2% of the total. This is followed closely by Social media at 23.1% and Mobile apps at 21.5%, suggesting that accessible, data-driven, and socially interactive platforms are primary engagement points. E-commerce platforms also play a notable role, contributing to the interaction. In contrast, IoT devices and other miscellaneous technologies show the lowest levels of engagement, indicating that while specialized hardware exists, youth and users currently gravitate more toward software-based and mobile-first digital solutions.

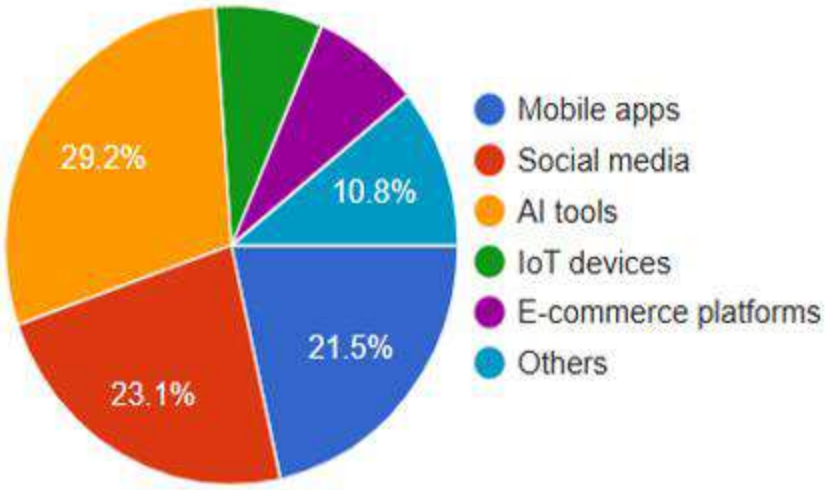


**Figure 13: Digital technology that encourage engagement in Agrifood system**

## 12. Digital tools used for decision-making in Agri-food systems

Based on the survey results regarding the use of digital tools for decision-making in Agri-food systems, a slight majority of respondents have adopted these technologies. Specifically, 53.8% of participants answered "Yes," indicating they utilize digital tools, while 46.2% answered "No." This data suggests a relatively even split, though it highlights that more than half of the sampled population is currently integrating digital solutions into their agricultural decision-making processes.

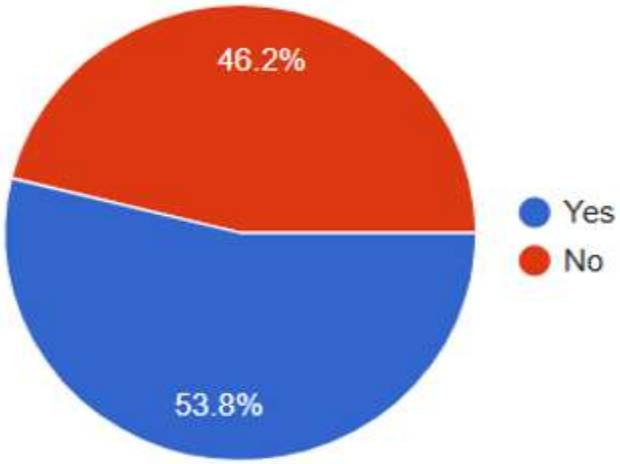


**Figure 14: Digital tools used for decision making**

## 13. Digital technologies used to engage other youth in decision-making

This pie chart illustrates survey responses to the question, "Have you used digital technologies to engage other youth in decision-making?" The results reveal a nearly even split among respondents: 50.8% indicated "Yes", while 49.2% responded "No". This slight majority suggests that while digital engagement for collaborative decision-making is a common practice among over half of the surveyed youth, a significant portion has yet to utilize these technologies for that specific purpose.

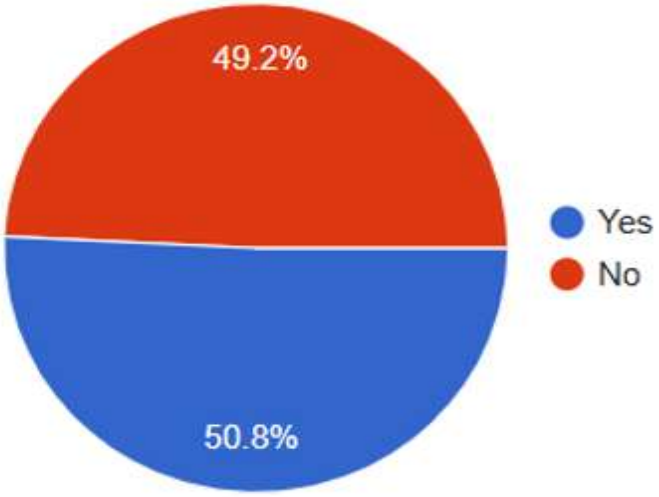


**Figure 15: Use of digital technology to engage other youth in decision making**

## 14. Benefits of engaging other youth using digital technologies

The survey results regarding the benefits of engaging other youth using digital technologies reveal that the most significant advantage identified by respondents is knowledge sharing, which accounts for 33.8% of the feedback. This is followed by better collaboration at 23.1% and innovation at 21.5%. While these three categories represent the majority of the benefits, a smaller portion of respondents cited others (18.5%) and increased participation as key outcomes of these digital interactions.

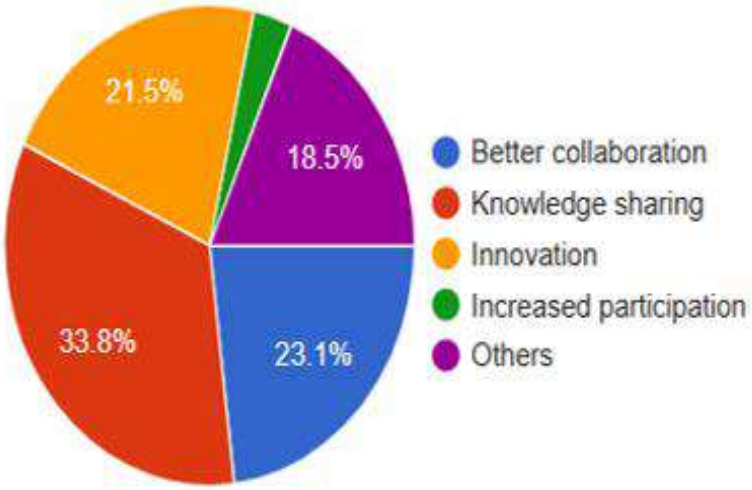


**Figure 16: Benefits of engaging other youth using digital technology**

## 15. Challenges in engaging other youth in decision-making

The pie chart illustrates several challenges in engaging other youth in decision making. The second largest category, Others, accounts for 20% of the responses. Practical and technical barriers also play a notable role, specifically Limited access to tools (15.4%), the Digital divide (13.8%), and Communication barriers (10.8%). Overall, the data suggests that while logistical and digital obstacles exist, the primary difficulty lies in addressing the underlying lack of engagement and interest among the youth population.

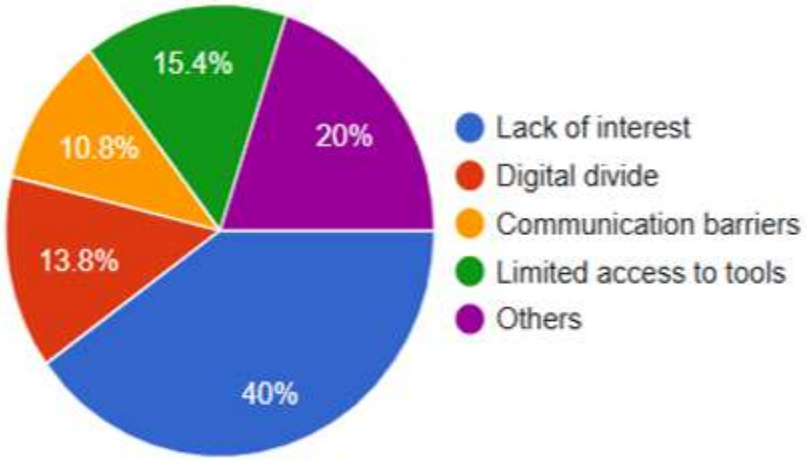


**Figure 17: Challenges in engaging other youth in decision making**

## Conclusion

The study highlights that youth are increasingly engaging with digital technologies in agriculture, particularly through mobile applications, AI tools, and social media platforms that support communication, information access, and decision making. Conceptually, the findings reflect the growing role of digitalization in transforming agri-food systems by enhancing knowledge exchange, efficiency, and innovation among young stakeholders. However, challenges such as poor internet connectivity, limited funding, lack of mentorship, and insufficient institutional support continue to restrict meaningful participation and technological development. The study suggests that strengthening the digital ecosystem through affordable technologies, policy support, capacity building, and mentorship can improve youth empowerment and encourage sustained innovation in the agri-food sector.

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