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16 October 2022

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Abstract

Aside from improving women's and youth's livelihoods and options, digitalization can contribute to the development of an inclusive future for smallholder farmers around the globe. Through the use of this technology, the agri-food sector and rural areas can be galvanized to become more productive and sustainable. In the course of research, rural development has been conceptualized in a variety of ways by researchers, ranging from a set of goals and programs to a well-integrated strategy, approach, or even an ideology in some cases. As far as the scope and content of the relevant literature are concerned, there is a lack of clarity. In addition, there are no clearly defined analytical boundaries within the literature. Several occasions have been called to the attention of the authors that this may be considered both as a strength and a weakness at the same time. One of the cornerstones of the Sustainable Development Goals (SDGs) is the development of digitally skilled rural communities because it allows for the diversification of incomes, and it allows for the creation of new employment opportunities and business opportunities for future generations, both on and off the farm, as well as allowing for the development of these skills. Due to the increasing demand for safe and nutritious food, digital technologies are particularly well suited to help the world's agrifood systems meet this growing demand, while also contributing to high-quality productivity growth and economic inclusion of marginalized groups in the economy, as well as better managing natural resources.

Keywords: *Rural development through technology, technology impact on rural livelihood, rural sector opportunities, impact of technology on rural youth and women*

Introduction

In order for farming to contribute to rural development, new agricultural technologies must be developed and delivered. Agricultural technology is traditionally portrayed as a new era in technology, aimed at rural farmers, and driven by government-funded research. In the future, agricultural technology policy must distinguish clearly between the needs of emerging commercial farmers, who are often involved with global commodity chains and require support in managing information- and skills-intensive innovations, as well as those of semi-subsistence and part-time farmers, who require simple technology that often saves labor. There is a role for the public sector in both sectors, both in research on its own behalf and in managing intellectual

property rights, forming public-private research partnerships, and providing information to farmers. Rural economies should be prepared to address the challenges and leverage the benefits of technological change in order to make the most of the digital age for people and businesses in the coming years. To facilitate a successful uptake of new technologies among rural dwellers and businesses, political will and forward-looking public policies are instrumental to establishing the appropriate conditions at the local level (such as the provision of quality broadband and education).

There will be an exponential pace of technological change during the Fourth Industrial Revolution (4IR), building on the digital revolution to combine technologies, create novel ones, and transform systems, industries, nations, and even society itself. It is often the youth and the women who suffer the worst consequences of regulatory bottlenecks, affordability issues, as well as structural problems that limit smallholders' access to digital technologies, as well as the business and development opportunities that these technologies facilitate, and they are often the first to pay the price for this. The primary beneficiaries of our recovery efforts and actions should be those who are the most affected by our recovery efforts and actions. In rural areas, young people are in the best position to acquire the knowledge needed in order to adapt to new technologies, expand agribusiness value chains with digital technologies, and lead the way towards digital transformations.

Advances in computing power, connectivity, artificial intelligence, biotechnology, geographic information systems (GIS), as well as newer, more capable technologies, hold enormous promise for developing countries. As technological change transforms individuals' lives and enables developing countries to progress at speeds and on scales previously unimaginable, agriculture, rural growth and structural transformation from agriculture to high-productivity manufacturing and other economic sectors can be accelerated.

Technology & Science can play an important role in bringing together individuals and institutions and facilitating the emergence of "Virtual Communities of Stakeholders" that generate and exchange knowledge and information among themselves as well as the emergence of "Virtual Communities of Stakeholders". The transformation of information systems into knowledge systems has resulted in Decision Support Systems (DSS), which provide relevant knowledge inputs to facilitate informed decision-making. Managing networking effectively is the first step toward developing interactive knowledge development processes that may lead to the development of learning networks.

Technology and current rural status

It is necessary, however, to invest more in research in order to develop multi-resistant crops. There is a significant gap between Asia and its global counterparts in the area of genomics, with its own scientists resisting the approval of genetically modified crops. It has been argued that such crops do not involve multinational monopolies, can be grown by poor farmers, and offer increased resistance to extreme climatic conditions. Digitized land

registration, mobile phones, and Uberized tractor services all contribute to improved farm management. There are a lot of ways that digital solutions can be used to help the world recover together, quickly, stronger, smarter, and greener for sustainable economic growth and development. At the local, state, and federal levels, upgrading telecommunications infrastructure has been a priority for the government at all levels. In spite of this, it appears that rural businesses do not appear to be particularly concerned about this issue. Upgrades to telecommunications infrastructure can still be justified as a means of supporting businesses in other sectors and bringing the benefits of telecommunications to rural households. It may also be possible to attract more technology-intensive manufacturing plants to rural areas by improving the infrastructure.

There is no doubt that technology can make the country's development more accessible and efficient, but there is still a need for a substantial increase in old-fashioned investments in order to catch up with the backlog in infrastructure and education in order to achieve a more geographically dispersed development away from the capital cities. It is estimated that around 18% of Asian adults are not able to read or write. Investments need to be made to address the gender divide, particularly when it comes to the education and training of women living in rural areas. There are still a number of rural areas that lack the geographical application of new technologies; many farmers are still unaware of the advances that have been made in these areas over the years. In rural areas, poor connectivity as well as a lack of basic computer literacy and knowledge has hindered the development of these areas, as a result of the lack of connectivity and basic computer literacy. In order to truly reap the benefits of the 4IR, it is essential that significant investments are made in infrastructure, power, broadband, transportation, and education, especially in rural areas and among the poorest populations, in order for the 4IR to realize its full potential.

Technology and Rural Community Development

There has been evidence to suggest that science and technology can be used to develop in rural communities a capability for learning and innovation that can be leveraged to enhance their efforts to solve problems and to improve their lives as a result. As a result of science and technology, these communities can empower themselves and increase the effectiveness of their development efforts by making informed decisions that are aimed at eradicating poverty, ensuring food security, and achieving sustainable development goals in rural areas, all of which are aimed at eradicating poverty. In spite of this, it is generally the urban areas that are the only places where technological applications can be found. Rural areas, although they have benefited from these technologies, have not been able to fully utilise them. Science and technology have made significant contributions to the advancement of agriculture during the last few decades as a result of their contributions to the field of agriculture. In rural education and extension services, there has been a lot of research that has been done on the role of television and radio. I believe that science and technology will continue to play a crucial role in the future, and I believe that these technologies will continue to play a crucial role in the future. As a result of the

technological revolution that has taken place in recent years, a new paradigm is now being developed for agriculture as a result of this change.

In order to achieve the goal of rural development, emerging technology will be key to ensuring poverty alleviation, food security, life skills, and education. The only way to determine whether the technology is in harmony with nature is through a scientific and rational approach. Otherwise, it may adversely affect our natural resources, flora, and fauna. We will be able to achieve sustainable development only if we inculcate rational and logical thinking. It is important to use technologies in a sustainable manner, and only in a way that does not interfere with the natural environment. It is the wise and rational utilization of technologies that are in harmony with nature that is the key to a developed and prosperous village.

Rural industries have undergone a radical transformation over the past fifty years. Advances in technology have enhanced the scale, speed, and productivity of farming equipment, allowing more land to be cultivated more efficiently. The quality of seeds, irrigation systems, and fertilizers has also greatly improved, which has resulted in an increase in yields among farmers. Currently, agriculture is in the early stages of yet another revolution, powered by data and connectivity. Using artificial intelligence, analytics, and connected sensors, as well as other emerging technologies, crop cultivation and animal husbandry could be improved, and water and other inputs could be used more efficiently, and sustainability and resilience could be built.

A rural policy that is proactive must also take into account global agendas and sustainable development goals in order to be effective. Climate change, poverty reduction, and gender equality are some of the goals that are included in these goals. At the local level, where governments are directly responsible for delivering on SDG targets, the SDGs will only be achieved if there is participation at the local level. There is no doubt that rural regions are crucial for the achievement of these global objectives since they are the source of biodiversity, natural resources, food, and raw materials in the world. Rural regions must be able to leverage innovation and work alongside local communities in order to contribute to the global reduction of poverty and the transition to a low-carbon economy by contributing to the reduction of poverty globally.

Conclusion

It has been proven that small farmers today have access to real-time information on soil, climate, irrigation, pests and diseases, as well as market prices, thanks to mobile phones. The micro-lenders also facilitate access to loans, customers, and input suppliers for small-scale commercial transactions, even if they are of a small scale. The author believe's via this research that young people are best placed to acquire the knowledge required to implement new technologies, make agricultural value chains more tech-savvy, and lead digital transformations in rural areas in a way that has never been achieved before. Several initiatives are being

undertaken to address digital gender divides, which is a significant and growing problem in the Asian-Pacific region where the digitalization of agrifood systems is progressing rapidly.

It goes without saying that digital public goods are at the heart of all government activities and have been designed to be used as innovative models for the transfer of knowledge from data platforms and evidence bases to the field through the use of digital public goods. Government agencies can play a significant role in making available better data and models as well as providing more targeted services to the public and private sectors in order to increase inclusion, resilience and adaptation in the future. If we do not take a proactive approach to technological change, it may negatively affect rural economies and contribute to an increase in the income disparity between rural and urban areas if we do not look to the future. In rural economies, there is a relatively high risk of job automation as a consequence of the large number of repetitive tasks that take place. The rural economies are also suffering from a lack of diversification and a high rate of outmigration of highly skilled professionals in the area. For rural communities and businesses to be able to fully exploit the benefits of the digital age and trigger innovations, a number of enabling factors must be in place.

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