

Tech overhaul to lead Bangladesh's agriculture to the future

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The current coronavirus pandemic has created giant seismic shifts in our day-to-day living and has presented us with a new set of challenges. As the pandemic rages on putting us in a quagmire, we have gradually seen technology playing an essential role during the crisis enabling greater connectivity between people through the creation of apps serving the role of shopping essentials and the tracking of corona cases alongside generous offers set by many leading tech firms to carry on both work and leisure activities on their respective application platforms.

As the economy wraps its head around the current crisis, it is also very important to take into one's stride that more dangerous crises might be turning up in the nearby future. In a time where social distancing is seen as a norm, we have seen the food system see shifts of its own. The food system itself is dependent on agriculture, which accounts for 14% of the gross domestic product. Thus, it plays a crucial role in food security for all of us whose lives are directly or indirectly dependent on it. In such case, agriculture or in this case, agribusiness has turned out to be a crucial and critical industry employing the role of technology to help agripreneurs to plan and create feasible environments for food production.

The food supply chain is a complex intricate web that ropes producers, consumers, pastoralists, and fishers together. Modern-day agriculture is driven by

evolving changes in digital tools and data. It is further bolstered by collaborations among farmers and researchers across the public and private sectors. A dynamic shift towards modernizing agriculture is possible by the new improvements in the use of both technology and technical know-how enabling the synthesis of agritech and agripreneurs to be game-changers in the future economy of both Bangladesh and the world at large.

Greater efficiency leads to greater sustainability

Agricultural policies evolve in response to changing needs of time and situations. Technology is a major aid in trying to bridge together the need for increases in production and supply of food. Innovative technology like blockchain could be used to create a digital and verified identity base of all the farmers alongside their transactional history linking them in an accessible network where relevant stakeholders like banks and insurance companies are present. It can provide farmers and entrepreneurs with a decentralized and secure transaction process. Being a write once-append only, distributed and decentralized system, it is helpful to

trace transactions and keep farmers in the loop with other platforms such as crowdsourcing ones that offer financial opportunities for farmers and entrepreneurs. A more transparent agricultural supply chain will allow us to highlight areas susceptible to unsustainable practices and farmers will be allowed to share information about their products freely with the customers and other businesses as well.

Artificial intelligence has also left a strong imprint in the field of agriculture as it has in other fields. The deployment of artificial intelligence is likely to enhance the flexibility of autonomous tractors, irrigation systems, and even drones well equipped with devices such as sensors, radars, and GPS systems. In addition to the blessings of artificial intelligence is the virtue of machine learning which is equally beneficial to the world food system. Analyzing crops beforehand increases the chances of having a better yield. Machine learning helps to take into account real-time and historical data alongside machine learning algorithms to enable proper decision making in areas, which need introspection. The methods are derived from the learning process. After a few learning experiences, the model can be used to make assumptions, categorize or classify them to test data. Through proper image processing and use of sensors to track weather conditions such as moisture or humidity, machine learning can help in improving overall

productivity.

Algorithms suited for the use in deep learning and computer vision help in the analysis of the data collected to report on important happenings. This, in turn, can help in a number of ways like the prevention of damage by diseases and an increase in yields.

Harnessing the power of tech

Social media and the use of mobile phone remains the easiest medium of accessibility of communication in the field of agriculture largely due to their conspicuous usage. With heightened use of smartphones with common apps, farmers can have untrammelled communication with farmers, traders, buyers and directly with consumers if needed.

With the help of modern technology, irrigation systems can be controlled from a phone or any electronic device. Painstaking journeys to the field no longer have to be taken. Apps such as 'Foursquare' can be used to monitor employees alongside cameras fit in places around the farm.

With a more detailed database and use of automated technology in agriculture, a systemic approach can indeed be taken to boost food production and security helping it to act as a boon in case there are more cases of impending concern in the future. Collaboration between the public and private sector alongside the promoting of agribusiness and agripreneurs would certainly contribute towards meeting this challenge.

