



Full Length Research Paper

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Agricultural science could be a broad multidisciplinary field of biology that encompasses the components of tangible, natural, economic and social sciences that are utilized in the observation and understanding of agriculture. (Veterinary science, however not animal science, is usually excluded from the definition.)

Various kinds of soil assessment area unit encapsulated in numerous ideas. excluding mining minerals, the most interest in soil has historically been in its potential for agricultural production. Assessments of the quality of soil for crop growth might be created even before the proof of written records.

Agriculture has seen several revolutions, whether or not the domestication of animals and plants many thousand years ago, the systematic use of crop rotations and alternative enhancements in farming apply many hundred years ago, or the Green Revolution with systematic breeding and also the widespread use of synthetic fertilizers and pesticides many decades ago. we recommend that agriculture is undergoing a fourth revolution triggered by the exponentially increasing use of data and communication technology (ICT) in agriculture.

Such profound changes in follow return not solely with opportunities however conjointly huge challenges. it's crucial to purpose them out at Associate in Nursing early stage of this revolution to avoid "lock-ins", advocates Associate in Nursing skeptics of technology ought to interact in an open dialogue on the long run development of farming within the digital era. as long as aspects of technology, diversity of crop and farm animal systems, and networking and establishments (i.e. markets and policies), are thought of together within the dialogue, ought to farming within the digital era be termed "smart farming".

Smart farming will offer a joint path out of locked-in technologies and practices characterised by robust polarization and market segmentation. It offers a path toward property agriculture by diversification of technologies, crop and stock production systems, and networks across all actors of the agri-food sector. there's no single policy approach that may accomplish this vision, that supports and facilitates the suitable use of ICT technology. Rather, the thought is to spot the dominant mechanisms that constrain or threaten a property use of the technology and to pick the foremost applicable actions in developed and developing countries.

This may lead to higher access to capital in some cases and to specific support of investments in others. Moreover, the support of hand in glove used farm-monitoring technology (e.g., conjointly in hand pilotless aerial vehicles observation fields of entire villages) or investments in education and coaching may additionally support the property use of those technologies. altogether cases, however, the policy surroundings ought to offer a transparent, legal setting that enables for effective possession and user rights.

The possibilities of the digital era may cause new varieties of diversification on farms. just like the talk and conceptualization of "smart cities," the probabilities of ICT can possibly not cause one globally uniform and chop-chop accepted farming system however to a diversity of farming systems. Technical innovations conducive to diversification area unit expedited by management recommendation if given with high responsibility and clarity, though farmers haven't created a definite crop before. Current issues with resistance, for instance to antibiotics and pesticides, can be avoided with the next diversity of production systems.

ICT allows farmers to exchange data, establish cooperation and critique, and perhaps even develop informal data systems that may complement the formal data system of dominant authorities. Such a flow of knowledge among farmers and between farmers and customers would be scale-independent and wouldn't be restricted by state borders. Clear signs for Associate in Nursing adoption of such systems may be seen already in developed and developing countries, with social media platforms.

ICT and information management will offer novel ways that into a profitable, socially accepted agriculture that edges the setting (e.g., soil, water, climate), species diversity, and farmers in developing and developed countries. however this could solely happen with the proactive development of policies supporting the mandatory legal and market design for sensible farming, with a dialogue among farming technology supporters and skeptics, and with careful thought of rising moral queries.