Artificial Intelligence (AI) and Internet of Things (IoT) for Inclusive Agro-Ecosystems for Sustainable Development.

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Abstract

The technological advancements in agriculture have resulted in higher yields but lower nutritional value and ecological efficiency. Lesser innovations in later sectors have crippled our agro-ecosystems to meet the demands. Recent advances in earth observation system (EOS), open-access (AO), artificial intelligence (AI) and machine learning (ML) along with smartphone enabled citizen science (CS) opened tremendous opportunity to address the gaps for demand-driven precision interventions across the scale (e.g., space, time and package). Such technological enablement for smallholder farmers and farms is very much needed to achieve the desired yield and agro-economy. While complexity of small landholdings, heavy and embedded-machinery is expensive and/or often not universal for diverse cropping. Therefore, it is necessary to bring insights from raw/big-data through a unified system leveraged by intelligent information processing to enhance the farm productivity and profits. The system address the market flux in response to supply-depend symmetry of the given commodities in the target zone. The proposed inclusive-integrated system gives power to farmer by leveraging the AI, ML, and IoT to give optimum solutions at famer's finger tips. Our aim is to reduce the resources use and enhance the agro-ecosystem productivity of farms and farmers. This multidimensional and interactive information will also help proper alignment of the factors at a manageable scale and affordable cost to benefits stallholders and support the sustainable development goals (SDGs).

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