AI BASED START-UP:
NEED OF SUSTAINABLE AGRICULTURE

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India's population has grown rapidly from 361 million in 1951 to 1.428 billion today, making it the world's most populated country and this growth is driven by "population momentum", which is the tendency of a population to keep growing even if fertility falls. It simply implies we need more agricultural production to feed the nation. At one side, where we essentially need more food to feed and just opposite at other end, Indian farmers are facing significant challenges such as climate change along with erratic monsoon pattern, pest infestations, poor soil health and finally resulting into declining yield. They are not getting better marketing price for their products due to highly unstable markets and it also become worse by imposing high interest from local lenders. There is lack of policy to handle post-harvest issues such as crop wastage, logistics and easy ways of accessing the markets.

AI based technologies is very helpful for improving efficiency in various agricultural related operation such as crop yield, irrigation, soil content sensing, crop- monitoring, weeding, crop establishment. These technologies enabled the Indian farmers to produce more output with less input and even improved the quality of output, also ensuring faster go-to- market for the yielded crops. Presently we have nearly 75bmillion devices and in coming future the average farm is expected to generate approximately 4.1 million data points every day. In other words, We may ensure that in coming years AI based technologies will transform the agriculture related operation and will enter into new era of advanced agriculture.

AI CONTRIBUTION IN AGRICULTURE

A. Image recognition and perception

These technologies are applied in recognition and surveillance, human body detection and geolocalization, search and rescue, forest fire detection etc. they are becoming popular due to their amazing imaging technology and versatility from delivery to photography and ability to be piloted with remote controller. These enables us to do a Iot with these devices also. These results into using of , drones or UAVs, able to reach great heights and distances and carrying out several applications.

B. Skills and workforce

AI is making possible of collecting and analysing large amount of data from government as well as public websites and providing solutions to many ambiguous issues to farmers community. It provides a smarter way of irrigation which results in higher yield to the farmers. Due to artificial intelligence, farming will be found to be a mix of technological as well as biological skills in the near future which will not only serve as a better outcome in the matter of quality for all the farmers but also minimize their losses and workloads.

C. Maximize the output

AI is helping in the best selection of the crops and even have improved the selection of hybrid seed choices which are best suited for farmer's needs. AI algorithm makes possible to understand, how the seeds react to various weather conditions, different soil types in a better way. These data sets will surely reduce the chances of plant diseases and enable farmers to meet the market trends, yearly outcomes, consumer needs, resulting into maximum return on crops.

D. Chat-bots for farmers

Chat-bots are the conversational virtual assistants who automate interactions with end users. Artificial intelligence powered chat-bots, along with machine learning techniques has enabled us to understand natural language and interact with users in away more personalized way. In agriculture, this facility has been used by assisting the farmers to receive answers to their unanswered questions, for giving advice to them and providing various recommendations also.
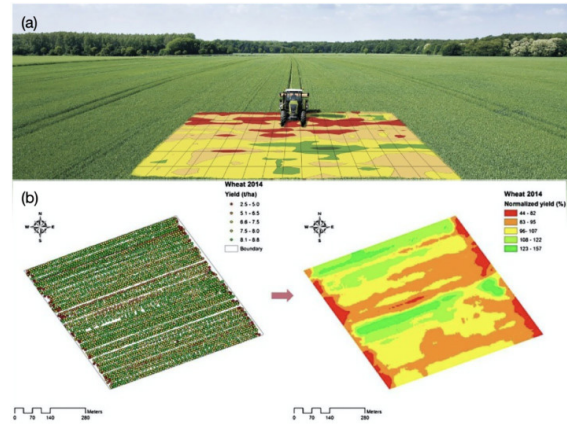
INITIATIVE TAKEN

The World Economic Forum's AI4AI (Artificial Intelligence for Agriculture Innovation) is stepping in to support India's agricultural transformation by driving the use of artificial intelligence (AI) and related technologies for agricultural advancements. In India, C4IR (Centre for the Fourth Industrial Revolution), is leading initiatives and bringing together government, academia and business representatives at one platform to develop and implement innovative solutions in the agriculture sector. To foster initiatives India has launched AI for India 2.0, India AI Mission, AI for All, Responsible AI for Youth. These initiatives have the agenda of establishing strong AI ecosystem by providing AI skills and education t government schools students i.e. equipping young mind of India for better tomorrow. In India, Telangana has been at the forefront by establishing Applied AI Research Centre in collaboration with IIIT Hyderabad. One of the most successful is 'Saggu Baggu' developed in partnership with Telangana state government in Khammam district with support of Bill and Melinda Gates Foundation and implemented by Digital Green. This inititaives has substantially improved the chilli value chain fore than 7000 farmers. Farmers

Participating in the programme saw a 21% increase in yield per acre along with reduction in pesticide and fertilizer use, results into quality enhancements which fetches 8% more unit prices. It not only highlights the success of Saagu Baagu but its contribution in sustainable agricultural practices.

In conclusion remarks, it is essentially important to mention that if we want that India should transform the agriculture system and led the industrial revolution then sure there is need to more initiatives like Saagu Baggu and should appreciate the new agri. start-up and for the same we have to train more young mind enable them to come forwards to bring the change.