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India, a land of agriculture, has already begun looking to Artificial Intelligence for help. *The Pioneer's* SHIKHA DUGGAL talks to experts from the city who've been making the most of AI, about adopting AI in agriculture, its future and more..



## AI IN AGRICULTURE: THE NEW HELPING HAND

The trends in food security have mostly pointed towards technology! We must walk towards the progress of achieving sustainable development goals of food security while also eradicating issues of malnutrition. It's a need of the hour for us to move beyond traditional methods. Artificial Intelligence inputs have helped us in various ways! From improved seeds, early warning system, maximising yields, resource management to market access and bringing transparency to the agricultural market, it has all the potential to address such challenges. Machine algorithms reduce the risks in agriculture while also making it possible to forecast any pest outbreak, alerting the farmers. The key technology these days is shaping the future of the Hyderabad as well. Moreover, in a unique distinction, Hyderabad has become the only city in India to be recognised as a 'Tree City of the World' by the Arbor Day Foundation and the Food and Agriculture Organisation of the United Nations. With such recognitions, the state government now is looking to develop more strategies to enhance the agricultural sector along with the city skyline. Artificial intelligence will turn out to be a significant tool for the city's economic transformation. Creating better solutions for societal possessions is what we ought to do.

About adopting AI-based solutions, Rituparna Majumder, Manage, Life science advisory



group at Sathguru Management Consultants, a Hyderabad-based company, shares, "In the recent years, artificial intelligence based technologies have been driving innovations in the agricultural industry by creating pathways for analysing data in ways not used earlier. These tools help in developing agricultural produce in a more sustainable, efficient and affordable manner. To witness next level paradigm shift in the seed industry, wide scale adoption of such technologies across the seed industry value chain is essential! The seed industry today is mature and has standardised maneuvers over the course of time, however, it has inherently slowed down by low levels of automation across the seed



supply chain. Seeds are primary building blocks for ensuring improved productivity across crops. The predominant current rate of genetic improvement for crop productivity enhancement is not sufficient to meet the global demand of sustainable food security. Further, operational challenges related to time consuming and labor intensive operations, biotic and abiotic stresses, weather dependency and quality issues hinder efficiency of the business. So, modern AI based technologies today target shrinking breeding time and costs, increase the probability of achieving breeding targets, multiple trait detection, augmenting physical and morphological seed data, rapid results and secure platform for systematic data storage. Amalgamation of AI based technologies across the seed industry value chain not only bring about the needed time and cost effective solutions for the industry but also improve operational efficiency across agriculture business operations. Adoption of such AI based

processes would mean better, quicker, informed and accurate decision making regardless of rapid changes in the environment. On the overall agricultural front, this would help in mitigation of the environment risks since the most critical agricultural input seeds will be precisely delivered."

Artificial intelligence is going to change the world more than anything in the history of mankind! Today it's acting as a key-giver of robotics, techno-power and information skills — a technological innovator for the foreseeable future! Talking about the same, Sachin Darbarwar, CEO of Simply Fresh at Hyderabad, who uses global technology in farming based on European standards, shares, "Artificial intelligence when combined with precision farming becomes so relevant in the farming arena. For a human to pay attention to each and every variable or factor in the agricultural sector becomes unfeasible at times. It's time for us to rely on the new waves of tech-power as well! For example, if one has to take over the control of climate in a green-house, the person must be equipped well to know what happens two hours later. Predicting humidity slots, these kinds of calculations can be well-maintained with the help of AI. Humans are allowed to take recreational breaks, the AI technology will always be at its toes. Simply Fresh is shaping the city's agricultural future with the help of these intelligence inputs, we use AI tech-

nology in farming to grow, nourish, pick and process. Our farming uses sustainable practices that don't exhaust natural resources. Right now, we managed close to 60 variables along with approximately five-thousand sensors in the farm and with our new technique called 'Farm in a Box' it takes care of the full life-cycle process of the agriculture farming. It's all programmed — what kind of feeding the plant requires, the climate conditions, further forecasting, etc. Additionally, in a country like ours, where issues of water scarcity persist, especially for agricultural use, we can reduce our water-consumption for farming purposes by using hydroponic and AI technology."

Telangana IT Minister K T Rama Rao feels artificial intelligence has the potential to offer immense possibilities for farmers, the government and all the other stakeholders of the ecosystem. "Telangana has defined its vision to be a global leader in emerging technologies including artificial intelligence now, and has also made rapid strides towards achieving this dream," he was recently quoted as saying when the state collaborated for an agricultural innovation programme. The government of Telangana declared last year as the year of artificial intelligence so we could accelerate artificial intelligence willingness along with developing a conducive AI innovation bionetwork for social impact.

So, cheers to an AI-led innovation state now!

