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DRONES IN INDIAN AGRICULTURE AND NEW START-UPS

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INTRODUCTION

Agriculture is the major source of income generation option for the majority of the rural households in India. Indian economy is also heavily reliant on the agricultural output that constitutes a major portion of its exports as well. Total crop failure due to adverse climatic conditions and uncontrolled pests issues are acts as the limiting factors in successful crop production practices. Drones are more formally known as Unmanned Aerial Vehicles (UAVs) or unmanned aircraft systems. Primarily, a drone is a flying robot that can be remote operated or can fly autonomously using software-controlled flight plans in its embedded systems, that work in conjunction with on board sensors and a global positioning system (GPS). Till now, they were primarily used by mining and construction companies, army personnel, and hobbyists. In present time drone based different applications are readily available for use in various sectors of agriculture as well. Though the technology is still nascent in India, many companies and start ups are trying so that it is easily available to Indian farmers and ready to be used to increase efficiency in agricultural production.

The drone technology can help in reducing time and increase the efficiencies of different agricultural practices. The major benefits of drone technology are as follows:

1. Agricultural drones can help to determine moisture content, soil conditions that will help to finally evaluate efficient crop planning.
2. They can be used to monitor crop progress starting from seed sowing to harvesting of the produce.
3. Drones can be used to detect weather conditions. Storm drones can be used to make better predictions about weather abnormalities. The data generated can be shared with the farmers so that they can be prepared well before the event.
4. Agri-drones can be used to spray agro-chemicals or foliar fertilizers over large area in a very short time span.
5. The drones can be used in plantation programme, livestock monitoring and geofencing purposes.

There are some limitations also which mainly include:

1. Requirement of knowledge and skill to operate
2. Under windy or rainy condition flying is not recommended.

3. Very often in rural areas online coverage may not be available and farmers may have to invest in purchasing internet connectivity.

Name of the Start-ups	Founded Year	Location
Idea Forge Provider of drones for aerial surveillance	2007	Mumbai
Tartan Sense Provider of an AI-based robot for agriculture	2015	Bangalore
Skylark Drones Drone analytics platform for multiple industries	2014	Bangalore
Terra Drone India Provider of end to end topographical survey using drones	2018	Pune
General Aeronautics Provider of unmanned and manned aircrafts, design, testing and development services	2016	Bangalore
Aarav Unmanned Systems professional drone solutions for enterprises	2013	Bangalore

The Indian government has acknowledged the importance of unmanned aerial vehicles (UAVs), machine learning, and artificial intelligence with their Digital Sky Platform online (https://digitalsky.dgca.gov.in/). Drone start-ups in India have used this opportunity to accomplish better technological capacities. Many Indian start-ups are also showing interest in the drone industry and also they are aiming to invest in manufacturing of low-cost drones, which can help farmers and simultaneously create employment opportunities among the rural youth. A number of start-ups can be seen flourishing in this sector.

CONCLUSION

Looking further into the future, drone technology is going to change the agricultural scenario of the Country. Overall, it would be interesting to see how things go ahead, and how useful the applications of drones turn out to be in the long run.

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