India releases SOP for ag use of drones

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The Indian government has released a standard operating procedure (SOP) involving the use of drones for the application of pesticides in agriculture, forestry and non-cropped areas. A "conditional exemption" for use of the technology has been cleared by the country's Ministry of Civil Aviation, and the Indian aviation watchdog, Director General of Civil Aviation (DGCA).

While the SOP covers aspects such as drone registration, flying permission, crowded area restrictions, insurance and emergency handling plans, among others, it also lays down several statutory provisions governing drone-based spraying. The provisions mandate drone operators to use only approved insecticides and formulations at authorised concentration and height, adding that the area of application must be marked by the operators. Furthermore, it states that aerial operations must be notified to the public at least 24 hours in advance through written submissions to competent local authorities.

Operators are required to abide by existing regulations, including obtaining a unique identification number (UIN) from the DGCA, besides ensuring that the drone hardware and firmware are compliant with the latter's **Digital Sky** platform. An unmanned aircraft operator permit (UAOP) is to be obtained in case the operator intends to deploy the drones commercially. Precautions to be implemented include calibration of the spray system to ensure optimum nozzle output, marking of proposed treatment areas, setting up buffer zones between drone treatment and non-target crops, and confirming the presence of water sources in the vicinity of treated areas, among others.

The SOP notes that the drones must include features such as "return to home" (RTH) on empty tank and be able to resume the mission from the point where RTH was engaged. Furthermore, it mandates that drone operators electronically submit spray monitoring data to India's Central Insecticide Board & Registration Committee (CIB&RC) within seven days of undertaking spraying operations.

Industry reaction

Agrochemical industry association CropLife India has hailed the government's move. It welcomes the development as a "proud moment" for the country and anticipates the SOP becoming the "benchmark" for similar engagements in other Asian countries.

CropLife India highlights that it took part in several deliberations, adding that the SOP consultation process "greatly appreciated" its **inputs** on the matter. With the framework in place, the association's chief executive officer, Asitava Sen, urged industry players to set afoot required trials, apply for product registrations and collaborate with drone manufacturers and service providers. He also observed that the government must focus on ease of doing business to ensure rapid proliferation of the technology and prevent hurdles in their adoption.

Stepping stones

While the **civilian use** of drones in India is regulated under a strict set of guidelines, the idea of using drones in agriculture had gained traction over the past couple of years with the domestic agrochemical industry urging the government to design a policy. As a first step in the direction, India **conditionally** allowed the deployment of drones to tackle an unprecedented infestation of desert locusts (*Schistocerca gregaria*) in 2020. A preliminary framework was believed to be in the offing when in November **last year** India-based research centre, International Crops Research Institute for the Semi-Arid Tropics (ICRISAT – Hyderabad), was granted "conditional exemption" for six months to conduct agricultural research using drones.

This was followed by the country's Ministry of Agriculture and Farmers' Welfare getting a DGCA permission **in February** to

use the technology for capturing images of rice and wheat fields in 100 districts for insurance surveys. The biggest impetus came with the government initiating a dialogue with stakeholders **in June** following the publication of a **consultation paper** on the country's national digital agriculture ecosystem, dubbed the IDEA (India Digital Ecosystem of Agriculture). In the run-up to the SOP being published, national media reported **in November** that Chennai-based drone manufacturer Garuda Aerospace was to manufacture 1,000 drones for use in the country's agriculture sector.

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