



# Drones: Mapping Lands, Fighting Crimes and Boosting Agriculture

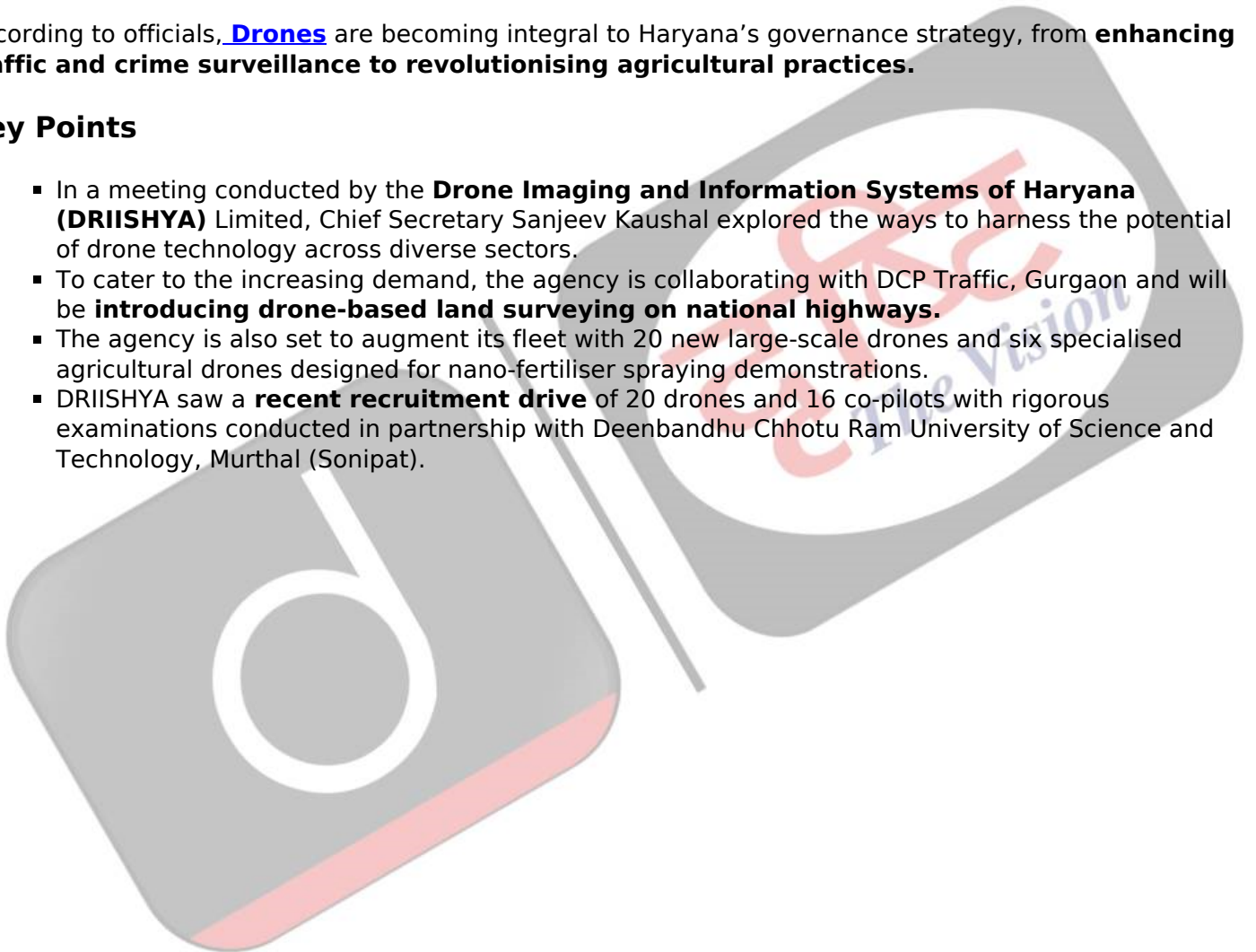
## Why in News?

According to officials, [Drones](#) are becoming integral to Haryana's governance strategy, from **enhancing traffic and crime surveillance to revolutionising agricultural practices.**

## Key Points

- In a meeting conducted by the **Drone Imaging and Information Systems of Haryana (DRIISHYA)** Limited, Chief Secretary Sanjeev Kaushal explored the ways to harness the potential of drone technology across diverse sectors.
- To cater to the increasing demand, the agency is collaborating with DCP Traffic, Gurgaon and will be **introducing drone-based land surveying on national highways.**
- The agency is also set to augment its fleet with 20 new large-scale drones and six specialised agricultural drones designed for nano-fertiliser spraying demonstrations.
- DRIISHYA saw a **recent recruitment drive** of 20 drones and 16 co-pilots with rigorous examinations conducted in partnership with Deenbandhu Chhotu Ram University of Science and Technology, Murthal (Sonipat).

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# DRONE TECHNOLOGY



Drone is a pilotless flying machine, using aerodynamics for lift, can operate autonomously or remotely, and may carry lethal or nonlethal cargo.

## COMPONENTS

- Unmanned aircraft (UA)
- Control system (ground control station - GCS)
- Control link (specialized datalink)
- Other related support equipment

## CLASSIFICATION

(as per Drone Rules, 2021)

- Nano: <250 gm
- Small: 25 kg to 150 kg
- Micro: 250 gm to 2 kg
- Large: >150 kg
- Mini: 2 kg to 25 kg

## APPLICATIONS

- Mapping & Surveying** (asset inspection, roof inspections)
- Agriculture** (bird control, crop spraying & monitoring etc)
- Multispectral/thermal/NIR cameras, **Aerial Photo/videography** and Live streaming events
- Emergency Response** (search and rescue, marine rescue, fire fighting)
- Disaster** (zone mapping, disaster relief etc)
- Mining**
- Monitoring Poachers**
- Meteorology**, Aviation, Payload carrying

## DRONES IN DEFENCE

### Purpose

- Surveillance and Reconnaissance
- Search and Rescue
- Maritime Surveillance
- Combat Drones
- Offensive (heterogeneous SWARM drones)
- Counter-Terrorism Operations

### India's Counter-Drone System

- Indrajaal** (India's inaugural autonomous drone-defense dome)
- Procurement of combat-capable **Heron drones from Israel**
- Acquisition of **MQ-9B Armed Drones from the US**

## RELATED REGULATIONS

- Aircraft (Security) Rules, 2023
- Drones Rules, 2021 and Drone (Amendment) Rules, 2022

## INDIA'S INITIATIVES

- Digital Sky Platform
- No-Permission-No-Takeoff (NPNT) framework
- PLI Scheme for Drones
- Drone Shakti Scheme

## ISSUES

- Increased risk of armed attacks
- Data security
- Cheaper cost** enables a larger population to procure drones
- Use of drones in warfare (**remote warfare**)
- Procurement by non-state actors** can pose serious threats
- Ease in **delivering mass destruction weapons**

