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The Big Picture: Draft Drone Rules: Impetus to Future Tech

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Why in News

Recently, the **Union Ministry of Civil Aviation (MoCA)** released the **Draft Drone Rules, 2021**, based on “**trust, self-certification and non-intrusive monitoring**”.

Key Points

- The updated draft Drone Rules, 2021 will replace the **Unmanned Aircraft System (UAS) Rules, 2021**.
- The focus of the rules here is to give push to a new age technology and its implementation on the ground.

- The cumulative market potential for the drone sector in India by the next 8-10 years is expected to grow as much as three lakh crore rupees.
- The rules make it much easier for the individuals and companies to go ahead and operate drones.
 - It makes the **certification process simpler** for manufacturers and other stakeholders.

Drone Technology Sector

- **Drone:** It is a layman terminology for **Unmanned Aircraft (UA)**. There are three subsets of Unmanned Aircraft- **Remotely Piloted Aircraft, Autonomous Aircraft** and **Model Aircraft**.
 - Remotely Piloted Aircraft** consists of remote pilot station(s), the required command and control links and any other components, as specified in the type design.
- **Application of Drone Technology:** Drones are a transformative technology. They have been and can be used in various significant areas:
 - **Defence:** Drone system can be used as a symmetric weapon against terrorist attacks.
 - The unmanned aircraft systems or drones can be integrated into the national airspace system.
 - **SVAMITVA Scheme:** The drone technology in the **SVAMITVA scheme** launched by the Government of India, within less than a year, has helped about half a million village residents to get their **property cards** by mapping out the abadi areas.
 - **Delivery Purposes:** Recently, the Ministry of Civil Aviation has approved a project with the **Telangana government for using drone technology to deliver vaccines** in remote areas.
 - **Agriculture:** In the agriculture sector, micronutrients can be spread with the help of drones.
 - It can also be used for performing surveys for identifying the challenges faced by the farmers.
 - **Commercial Purposes:** Commercial opportunities are also there for drone technology:
 - The railways are using drones for track monitoring.
 - Telecom companies are using drones for monitoring the tower.
 - **Other Purposes:** Drones are also significant for the law enforcement agencies, the fire and emergency services wherever human intervention is not safe and the healthcare services.

- **R&D in Drone Sector:** Drones are **one of the 24 sectors that are taken care of by the Government of India** under the **Ministry of Commerce and Industry** as the area where the **Atma Nirbhar Bharat scheme** can be well implemented.
 - India not only has a very extensive **R&D being carried out at institutions** like IIT-Kanpur, IIT-Bombay, IIT-Delhi etc but also at the same time the **research is being transformed into products**.
 - India has **more than 130 startups** registered with IITs and other companies for introducing drones in multiple application areas.
 - The end users are also **eager to adopt drone technology** because it helps them **generate significant value** not only in **reducing costs** but also in increasing the opportunity to leverage drones in their **digital value chains**.

Draft Drone Rules, 2021

- **Unique Identification Number:** Each drone has been specified to have a **unique identification number** with the transmission of their location, altitude, speed etc.
 - Any drone missing a unique id number with the other details will be a rogue drone.
 - Every flight of the drone will be monitored in the **digital sky platform** so when any remote pilot tries to fly a drone, its fly path will automatically be registered in the platform.
- **Digital Sky Platform:** It is an initiative by MoCA to provide a secure and a scalable platform that supports drone technology frameworks, such as **NPNT (no permission, no take-off)**, designed to enable flight permission digitally and manage unmanned aircraft operations and traffic efficiently.

There will be minimal human interface on the digital sky platform and most permissions will be self-generated.
- **Simplified Requirements:** Requirements for granting permission for acquisition and usage of drones have been simplified.
- **Prototypes:** Requirements for manufacturers and other stakeholders have been eased for getting prototypes.
- **Ease of Doing Business:** The new draft rules provide the **Ease of Doing Business** for the industries.
 - Earlier there used to be 25 forms to be filled up which now has been reduced to 5.
 - Clarity about registration and remote-pilot licensing have been given.
 - Insurance of drones has also been taken care of.
- **Division of Country in Zones:** The digital sky platform will have an interactive airspace map dividing the country into **green, yellow, and red zones**.

While the yellow zone has been reduced from 45 km to 12 km from nearby airport perimeter, no flight permission is required up to 400 feet in green zones and up to 200 feet in the area between 8 and 12 km from the airport perimeter.

Issues Associated

- **Increased Risk of Armed Attacks:** Operation of drones without any adequate legal backing can pose several security threats.
 - Incidents of arms being dropped by drones are also there such as the recent **Jammu drone attacks**.
 - They can be put to destructive use, to slam into critical targets, destroy infrastructure and so on.
- **Paramilitary Not Exempted from the Rules:** As per the new draft, the rules and regulations are not applicable to the army, navy or the airforce.

However, it still includes paramilitary forces. BSF is suffering a lot of issues due to the drones coming across the lines.
- **Cheaper Cost Enables a Larger Population to Procure Drones:** Drones are relatively cheaper in comparison to conventional weapons and yet can achieve far more destructive results which is the primary reason for increased number of drone attacks.
- **Delivery of Mass Destruction Weapons:** What makes combat drones most dangerous is the threat of them being used to deliver weapons of mass destruction.

Procurement of combat drones by **non-state actors** poses serious threats.

Way Forward

- **Training Programs:** There has to be training programs for drone pilots. The drone technology alone will not be enough, there have to be a few more aspects to take care of for using the technology to its fullest.
- **Balancing Security and Benefits:** We need to ensure that the guidelines are in such a manner that the security concerns are not at all compromised but the drone technology is also used to the maximum of its advantages.
- **Developing Anti-Drone System:** The **DRDO** has started developing an anti-drone system, one is already in place. There are soft kill and hard kill options available.
 - Soft kill options include jamming the drone.
 - Hard kill options include the laser technology, missiles or other drones to shoot it down the drone.
- **Increasing Investments:** India needs to invest in its own **Unmanned Aerial Vehicle (UAV) systems** and **counter-drone technology** to detect and track threats, especially around critical assets.

Conclusion

- The drone technology in India has immense significance and potential. The security concerns should be dealt with judiciously and not just be allowed to restrict us from adopting the technology.

However, security concerns must not be compromised.

- In years to come, drone technology is expected to be the most cost effective choice and the most utilised system in the civilian as well as military domain.