

**GOVERNMENT OF INDIA
MINISTRY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF SCIENCE AND TECHNOLOGY
LOK SABHA
UNSTARRED QUESTION No.950
TO BE ANSWERED ON 07/02/2020**

DIGITAL MAPPING OF THE COUNTRY

**950. SHRI VELUSAMY P.:
SHRI SHANMUGA SUNDARAM K.:**

Will the Minister of SCIENCE AND TECHNOLOGY विज्ञान और प्रौद्योगिकी मंत्री be pleased to state:

- (a) whether the Department of Science and Technology has taken up the task of digitally mapping the entire country;
- (b) if so, the details thereof;
- (c) whether the existing GPS system which is based on satellite-based navigation system cannot be used for digital mapping;
- (d) if not, the reasons for bringing drone based digital mapping system;
- (e) the number of States to be covered under the scheme and the accuracy of the digital mapping done by drones; and
- (f) the steps taken by the Government to preserve the data?

ANSWER

**MINISTER OF HEALTH AND FAMILY WELFARE; MINISTER OF SCIENCE AND TECHNOLOGY; AND MINISTER OF EARTH SCIENCES
(DR. HARSH VARDHAN)**

**स्वास्थ्य और परिवार कल्याण मंत्री; विज्ञान और प्रौद्योगिकी मंत्री; और पृथ्वी विज्ञान मंत्री
(डॉ. हर्ष वर्धन)**

(a) & (b): Yes Sir. Survey of India (SoI) under Department of Science & Technology (DST) has taken up the work of digitally mapping the entire country being done as per National Map Policy-2005 under "Generation of High Resolution National Topographic Database (HRNTDB)" scheme during next three financial years from 2020-2021, using:

- 1) High Resolution Satellite Imagery (HRSI) (Sub - meter Imagery): 22.5 lakh sq km.**
- 2) Drone/Unmanned Aerial Vehicle (UAV) (Professional Survey Grade): 10 lakh sq km.**

Work components in the scheme are:

- i. Ground Control Points provisioning/Data Capturing**
- ii. Geo-referencing/Data Processing**
- iii. Feature Extraction**

- iv. **Ground validation/Attribute Collection**
- v. **Final Map Publishing**

Deliverables are:

Topographic data layers (based on Spatial Data Model Structure (SDMS) on various scale) viz.

- i. **1:2,000/1000/500 scale data/maps for urban/semi urban/rural settlement (abadi) areas.**
 - ii. **1:10,000 scale data/maps for balance areas.**
- (c) **The existing Global Positioning System (GPS) system being used for providing ground control points for data capturing, data processing, geo-referencing and ground validation cannot be directly used for digital mapping.**
- (d) **Drone based Digital Mapping System has been introduced for large scale mapping and is not a referencing system as Global Positioning System (GPS).**
- (e) **25 States and 7 Union Territories are covered under the scheme. The accuracy of Drone based Digital mapping is ± 10 cm Horizontal (planimetry) of Ortho Rectified Image (ORI) and Spatial Resolution and 5 cm Ground Sampling Distance (GSD).**
- (f) **Data is archived in Survey of India (SOI) directorates i.e. National Geo-spatial Data Centre, Dehradun and disaster recovery backup is being done at GIS (Geographic Information System) & Remote Sensing, Hyderabad.**
