GOVERNMENT OF INDIA
MINISTRY OF RURAL DEVELOPMENT
DEPARTMENT OF RURAL DEVELOPMENT

RAJYA SABHA
STARRED QUESTION NO. 375
TO BE ANSWERED ON 06.04.2022

SPATIAL PLANNING AND GIS MAPPING OF THE VILLAGES

375   DR. VINAY P. SAHASRABUDDHE:

Will the Minister of RURAL DEVELOPMENT be pleased to state:

(a)   the various spatial planning and GIS Mapping interventions sought after by the Ministry in the last three years, the details thereof;

(b)   the number of planning, geo-informatics and such other academic institutions involved in these spatial planing and GIS mapping assignments, the details thereof, State-wise; and

(c)   the educational institutions in Maharashtra which were empanelled for these assignments, the details of the villages they worked in and their performance monitoring?

ANSWER
MINISTER OF RURAL DEVELOPMENT
(SHRI GIRIRAJ SINGH)

(a) to (c):   A statement is laid on the table of the house.

STATEMENT REFERRED TO IN REPLY TO PARTS (a) TO (c) OF *RAJYA SABHA* **STARRED QUESTION NO. 375 TO BE ANSWERED ON 06.04.2022 REGARDING ' SPATIAL PLANNING AND GIS MAPPING OF THE VILLAGES'**

(a)   The Ministry of Rural Development has made use of various spatial planning and GIS mapping interventions for effective implementation of rural development programmes. Various interventions under the schemes namely, Mahatma Gandhi Rural Employment Generation Scheme (MGNREGS), Pradhan Mantri Gram Sadak Yojana (PMGSY), Pradhan Mantri Awaas Yojana- Gramin (PMAY-G), Shyama Prasad Mukherji Rurban Mission (SPMRM) and Digital India Land Records Modernization Programme (DILLMP) include preparation of GIS based Gram Panchayat plans, identification of rural roads connecting important facilities, geo-tagging of assets created under various schemes, geo-referencing of cadastral maps, etc. Details of the interventions is at Annexure - 1.

(b)   The number of planning, geo-informatics and such other academic institutions involved by the Ministry for spatial planning and GIS mapping assignment are 40. List of institutes at national level and state-wise is at Annexure 2.

(c)   Educational institution in Maharashtra empaneled for the assignment is CTARA-IIT Mumbai for preparation of spatial plan of clusters under SPMRM. However, spatial plan preparation has not been started under SPMRM in Maharashtra.

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Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)

Spatial planning of works under MGNREGS have been started using advanced technologies viz. Geographical Information System (GIS) and Remote Sensing (RS). All the States/UTs were directed to start the preparation of GIS based Gram Panchayat plans in 2 Gram Panchayats per Block and accordingly prepare shelf of works from the GIS based Integrated Plan during FY 2020-21 along with GIS based plans in saturation mode for all the Gram Panchayats of the Block. Ministry has provided States/UTs wise detailed training to MGNREGS functionaries on using GIS & RS technology in rural area planning. So far, 2.56 lakh GPs have prepared their plan.

The year-wise GP plans prepared using GIS mapping tools is as under:

Year	No. of GP plans prepared
2019-20	14183
2020-21	23767
2021-22	218986
Total	256936

Pradhan Mantri Gram Sadak Yojana (PMGSY)

GIS tools for identification of road-need, based on road network analysis with respect to important facilities like educational institutions, health facilities, etc. have been employed under the PMGSY. Web based solution, Geo-spatial Rural Road Information System (GRRIS) using 22 layers such as habitations, roads and drainage and GeoSadak, an online Geospatial Transaction System were developed and implemented for spatial planning, management and monitoring of PMGSY at national level.

No./Kms of roads identified under PMGSY using GIS is as under:

Sl. No.	Year	Sanctioned			Completed		
		Number of roads	Road Length (in km)	Bridges	Number of roads	Road Length (in km)	Bridges
1	2019-20	1,570	12,552	63	0	0	0
2	2020-21	5,819	43,903	471	71	9,755	5
3	2021-22	3,341	25,466	195	2,310	24,893	116
Total		10,730	81,921	729	2,381	34,648	121

Pradhan Mantri Awaas Yojana-Gramin (PMAY-G)

Under the Pradhan Mantri Awaas Yojana-Gramin (PMAY-G), programme implementation and monitoring is carried out through an end-to-end e-Governance model - Using AwaasSoft and AwaasApp. The capturing of GIS information of each houses constructed under PMAYG is one of the mandates under the scheme and is being carried out since inception of the scheme.

No. of houses geo-tagged under PMAY-G is as under:

Year	No. of houses geo-tagged
2019-20	5135005
2020-21	4050634
2021-22	4384257

Shyama Prasad Mukherji Rurban Mission

Under the Shyama Prasad Mukherji Rurban Mission (SPMRM), as per the Framework of Implementation (FoI), the area under every Rurban clusters need to be notified under a statutory Act and spatial plan has be prepared which would finally integrate with the District Plan/ Master Plan, as the case may be. Accordingly, a GIS platform for Spatial Planning has been developed by Bhaskaracharya National Institute for Space Application and Geo – Informatics (BISAG – N), Ahmedabad under a Memorandum of Understanding (MoU) signed between Department of Rural Development (DoRD), Ministry of Panchayati Raj (MoPR) & BISAG – N on 27th July 2021. Three pilot spatial plan have been prepared using the Shyama Prasad Mukherji Spatial Planning Platform (SPMSPP) for Shyamlaji Nirbhoypur, Singarayakonda clusters located in Gujarat, Tripura and Andhra Pradesh respectively where the support of SPMSPP with 101 GIS layers has been taken. In addition to this, Geo Rurban App is in use for geo- referencing of assets created under SPMRM. Assets are geo-tagged/ Mapped using GIS application and integrated to Rurban MIS.

No. of assets geo-tagged under SPMRM are:

Year	No. of assets geo-tagged
2019-20	6*
2020-21	22817
2021-22	25461

*Geo-Rurban app was launched on 21st February 2020

Digital India Land Records Modernization Programme (DILRMP)

Under Digital India Land Records Modernization Programme (DILRMP), digitization of cadastral map is a sub-component which is implemented using GIS intervention. Subsequently, Geo-referencing of Cadastral maps has been done by the States/UTs through high resolution satellite imaginary (HRSI) /Electronic Total Station (ETS) and Differential Global Positioning System (DGPS)/Aerial Photography.

As of now, cadastral maps have been geo-referenced in 2,05,350 villages and a total of 31.28% cadastral maps have been geo-referenced.

National level institutions involved under MGNREGS

1. National Remote Sensing Centre (NRSC)
2. Indian Space Research Organisation (ISRO)
3. C-GARD of National Institute of Rural Development and Panchayati Raj (NIRD&PR), Hyderabad

National level institutions involved under SPMRM

1. National Institute of Rural Development and Panchayati Raj (NIRD&PR), Hyderabad
2. School of Planning and Architecture, Delhi
3. Bhaskaracharya National Institute of Space Application and Geo-informatics-N (BISAG-N), Ahmedabad

List of empanelled State Technical Support Agencies under SPMRM

Sr. No.	State/UT's	Institution
1	Andhra Pradesh	1. Town and Country Planning Department, Andhra Pradesh
2	Andaman and Nicobar Islands	1. School of Architecture & Planning, Anna University, Chennai
3	Arunachal Pradesh	1. Amity School of Architecture and Planning, Gurugram
4	Assam	1. Tezpur University, Sonitpur
5	Bihar	1. National Institute of Technology, Patna, Bihar
6	Chhattisgarh	1. National Institute of Technology, Raipur
7	Dadra and Nagar Haveli and Daman and Diu	1. Centre for Environmental Planning and Technology University, Ahmedabad
8	Gujarat	1. Centre for Environmental Planning and Technology University, Ahmedabad
		2. Nirma University, Ahmedabad
		3. Arvindbhai Patel Institute of Environmental Design, Anand
		4. Indubhai Parekh School of Architecture and Planning, Rajkot
9	Haryana	1. Deenbandhu Chhotu Ram University of Science and Technology, Murthal , Haryana
10	Himachal Pradesh	1. Guru Ram Dass School of Planning Guru Nanak Dev University, Amritsar
11	Jammu and Kashmir	1. Guru Ram Dass School of Planning Guru Nanak Dev University, Amritsar
12	Jharkhand	1. Birla Institute of Technology, Mesra

13	Karnataka	1. School of Planning & Architecture, Institute of Development Studies, University of Mysore, Mysuru
14	Kerala	1. College of Engineering Trivandrum, Thiruvananthapuram
		2. Town and Country Planning Department, Thiruvananthapuram
		3. Kerala Institute of Local Administration, Thrissur
		4. Kerala State Remote Sensing and Environment Centre (KSREC), Thiruvananthapuram
15	Lakshadweep	1. National Institute of Technology, Calicut - Kattangal
16	Madhya Pradesh	1. Panchayat and Rural Development Department, Bhopal
17	Maharashtra	1. CTARA, IIT Bombay, Mumbai
18	Manipur	1. Indian Institute of Technology, Kharagpur
19	Meghalaya	1. North Eastern Space Application Centre, Government of India, Umiam
20	Mizoram	1. Mizoram Remote Sensing Application Centre, Planning Department, Aizawl
21	Odisha	1. Xavier School of Human Settlements, Xavier University, Bhubaneswar
22	Puducherry	1. School of Architecture & Planning, Anna University, Chennai
23	Punjab	1. Guru Ram Dass School of Planning Guru Nanak Dev University, Amritsar
24	Rajasthan	1. Swami Keshvanand Institute of Technology, Management & Gramothan Rajasthan Technical University, Kota
		2. HUDCO, Jaipur
		3. BITS, Pilani
25	Sikkim	1. Indian Institute of Technology, Kharagpur,
26	Tamil Nadu	1. School of Architecture & Planning, Anna University, Chennai
27	Telangana	1. SPA, Jawaharlal Nehru Architecture and Fine Arts University, Hyderabad
28	Tripura	1.Indian Institute of Technology, Kharagpur
		2. NIT, Agartala
		3. Tripura Space application Center, Agartala
29	Uttar Pradesh	1. Integral University, Lucknow
		2. Dr. A.P.J. Abdul Kalam Technical University, Lucknow
30	Uttarakhand	1. Indian Institute of Technology, Roorkee