

**GOVERNMENT OF INDIA
SCIENCE AND TECHNOLOGY
LOK SABHA**

UNSTARRED QUESTION NO:3919
ANSWERED ON:21.03.2013
MAPPING OF HIMALAYAN REGION
Bajwa Shri Partap Singh

Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

- (a) whether the Government has any proposal to map the topography of the Himalayan region for gathering high precision data;
- (b) if so, whether the Government would consider mapping the available water resources of the region through such exercise;
- (c) if so, whether this data would be available to civilian authorities to plan development activities in far flung areas; and
- (d) if so, the details thereof?

Answer

MINISTER OF SCIENCE AND TECHNOLOGY AND MINISTER OF EARTH SCIENCES (S. JAIPAL REDDY)

(a) & (b): Yes, Madam. Survey of India has generated topographical maps on 1:2,50,000 and 1:50,000 scales for the entire country which covers the Himalayan region also. Some parts of the region are also covered on 1:25,000 scale. In addition, Indian Space Research Organization (ISRO), under Department of Space has generated a Digital Elevation Model (CartoDEM) using 2.5 meter resolution Cartosat-1 Satellite Stereo Data covering most of the Indian region including Himalayan region. The G.B. Pant Institute of Himalayan Environment and Development, under Ministry of Environment and Forests, has also undertaken the study of the tectonic deformation in the Himalayan region. ISRO has mapped and monitored seasonal snow cover areas during 2004-05 and 2011-12 timeframes and also carried out mapping of the glaciers (which drain into Indian Territory from Indus, Ganga and Brahmaputra basins of Himalayas) during 2004-07 timeframe using Indian Remote Sensing Satellite data. The above projects have been carried out for Ministry of Environment and Forest. ISRO is developing snow melt runoff models for Central Water Commission, Ministry of Water Resources to estimate water runoff due to snow melt during April-May-June months for five Himalayan river basins such as, Chenab, Sutlej, Beas, Yamuna and Ganga. Similarly, ISRO has undertaken mapping for Ministry of Environment and Forests in respect of wetlands for the entire country including Himalayan regions at 1:50,000 scale under National Wetland Inventory and Assessment project, using Indian Remote Sensing satellite data. ISRO has also mapped potential areas of ground water occurrence on 1:50,000 scale using Indian Remote Sensing satellite data in Himachal Pradesh, Jammu & Kashmir, Uttarakhand and Arunachal Pradesh at the behest of Ministry of Drinking Water Supply and Sanitation.

(c) & (d): The maps generated by ISRO are provided to the user Ministries. A coarse resolution version of the CartoDEM is available on Bhuvan (<http://bhuvan.nrsc.gov.in>), a geo-portal of ISRO, as free downloads. Finer resolution CartoDEM is also available for dissemination on commercial basis to Government organizations and Departments.