

In this issue

National Geospatial Policy

Achieving targets

The National Map Policy 2005 followed a non-geocentric coordinate system based on a locally best fitting Everest ellipsoid. To provide the data required, a network of national ground control points was established at a spacing of 250–300 kilometres across the country.

But the Everest may change height and move due to the movement of the Indian plate and the ground control points due to intraplate movements. To overcome the problem, the National Geospatial Policy of 2022 replaced the National Map Policy 2005. From the Everest ellipsoid, there was a shift to globally best-fitting ellipsoid, with its centre coinciding with the Earth's centre of mass, to provide the geodetic coordinates of latitude, longitude and ellipsoidal height.

In a General Article in the 10 February issue of *Current Science*, researchers from IIT Kanpur pointed out some of the problems confronting the achievements of the milestones set for the transition recommended in the policy. Now, in another General Article, the researchers follow up by pointing out other hurdles confronting the Geospatial Policy of 2022 and provide recommendations to overcome the problems. Turn to **page 147** in this issue to get a firm grounding on the way to achieving unambiguous and consistent geodetic positioning in India.

Gaganyaan Crew Module

Virtual reality exploration

In a Research Article in this issue, Jai G. Singla, Space Applications Centre (SAC) and Kshitija Suresh Shirke, an intern at SAC from the Institute of Information Technology, Pune provide a sneak peek into the virtual and augmented reality system that they have designed. As a proof of concept, they created a virtual reality model of the Gaganyaan crew module. Besides being immersed within the module allowing users to examine the details, users can also examine the exploded view of the components of the crew module.

The tools, techniques and tricks adopted by them for this fantastic visual

feast can be adapted to applications in space engineering, navigation, education and healthcare, they argue. Turn to **page 175** to a rewarding read.

Bengaluru Breathes with Rain

Causing crustal deformation

Researchers from the CSIR-National Geophysical Research Institute, Hyderabad report how Bengaluru moves in response to rain every year. The Earth's crust in the region is moving at an average speed of about 55 millimetres in the northeast direction. Superimposed on this is a seasonal movement: up and down by about 25 millimetres to north and south by about 2 millimetres. And this varies from year to year, depending on rain.

Using the continuous GPS data from the site established at the IISc campus in Bengaluru and the daily data from other sites extracted from the Magnet GPS network as well as the rainfall patterns in Bengaluru, the Research Communication on **page 238** documents and explains this phenomenon. The seasonal movement patterns of Hyderabad are less remarkable, say the authors.

Public Distribution System

Need for redesign?

The public distribution system in India helped improve calorie consumption even among the poorer sections of society. But nutritional deficiencies remain a problem. An article by researchers from two ICAR institutions in this issue examines the extent of the problem in sixteen villages distributed in the Budelkhand region covering two districts each selected based on the lowest and highest scores on the multi-dimensional poverty index.

The researchers conducted structured questionnaire based interviews with a total of 320 villagers. Some villagers showed a consumption of about 1500 grams per day while another only 1000 grams.

The researchers categorised ninety-one food items into twelve categories, to collected data on items consumed in the last twenty-four hours. Most households consumed more than five food groups in their diets, except in Chitrakoot district.

Basingha village in the Chitrakoot district had a high prevalence of under-nutrition, affecting over 75% of its population.

While the consumption of carbohydrates often surpassed the recommended dietary doses, the researchers note serious gaps in the intake of other essential nutrients. The differences between villages in the energy and nutritional gaps were also noticeable.

The data presented in the article on **page 214** raises important questions. Is it time for us to consider adding food items to the public distribution system to rectify the nutritional gaps? Should the public distribution system have a focus on villages that are undernourished both in terms of energy and essential nutrients?

Lemon Grass in Idukki

Livelihood for tribals

Lemon grass is the raw material for the perfumery, soap-making, cosmetics and insect-repellent industries. CSIR-CMAP had created Krishna, a high-yielding variety of lemon grass at its research centre in Bengaluru, a variety appropriate for the plains and hills.

Lemon grass grows well in Idukki, a hilly district in Kerala and tribal farmers in Marayoor Panchayat there were cultivating it – except that it was a low-yielding variety. Moreover, the methods of propagation and cultivation were unscientific and the technology used for steam distillation was primitive. So the productivity was extremely low.

Under a project funded by the UNDP, scientists from CIMAP went to the tribal areas, collected data, provided relevant information, partnered with the panchayat, farmers and youth, created linkages with the market and, over time, convinced them to move on to a more scientific method of cultivation and extraction of citronella oil. Read the Research Account on **page 153** to see the transformation of the livelihoods of tribals in Marayoor.

K. P. Madhu

Science Writing Consultant

scienceandmediaworkshops@gmail.com