

UN RESOLUTION

In February 2015 the UN General Assembly adopted the resolution “A Global Geodetic Reference Frame for Sustainable Development” - the first resolution recognizing the importance of a globally-coordinated approach to geodesy.

The GGRF Working Group is working on the development of a roadmap that will describe how governments can contribute to the sustainability and enhancement of the Global Geodetic Reference Frame.

unggrf.org

Significant benefits to the study of our changing planet

The UN General Assembly resolution “A Global Geodetic Reference Frame for sustainable development” adopted in February 2015 has been an eye-opener for society to the understanding of the importance of global geodesy.

Geodesy is poorly understood by the public, but it is fundamental to sustainable development. In this newsletter, geodetic researchers, experts and surveyors explain how the UN resolution on global geodesy and what it contributes to will benefit their work and the study of our changing planet.

Implement open geodetic datasharing

“Open geodetic data access from neighboring countries helps in modeling much better gravity field, as well as it facilitates the development of joint regional projects towards capacity building, for a better integration and dissemination of the understanding of the Global Geodetic Reference Frame.”

Guido Alejandro González Franco,
INEGI, Mexico

Geospatial capacity building

“The UN resolution has influenced the Pacific Island Countries to establish the Pacific Geospatial and Surveying Council for the development of geospatial capacity in the Pacific region. Accurate geospatial information provides a critical foundation for sustainable economic development.”

Faatasi Malologa,
Tuvalu Lands & Survey Department, Tuvalu

PHOTO: ANDRICK LAL



PACIFIC ISLANDS: GPS for defining territorial sea baseline on the Gilbert Islands of Kiribati.

Defining sea baselines

“I have worked on a project defining the territorial sea baseline. Transformation from local grid system to global reference system and local cooperation in the field survey together with the availability of GPS processing service made this possible.”

Andrick Lal,
Secretariat of the Pacific Community, Fiji

Observing global change

“The Global Geodetic Reference Frame is fundamental to interpreting geodetic observations related to global change, whether obtained from the surface of the planet or from satellites in space. Our own research includes

the high latitudes of planet Earth where combinations of data sources are essential.”

Dr. Bjørn Ragnvald Pettersen,
Norwegian University of Environmental and Life Sciences, Norway

Joint efforts on networks

“The UN resolution can give benefits to my research in the use of new approaches and methods of surveying in geodesy, as well as joint efforts to establish regional networks of GNSS/ GPS by the established national, public or private networks.”

Azamat Karypov,
Department of Cadastre and Registration of Rights to Immovable Property, Kyrgyzstan



Crustal deformations

“In Japan, many Earth scientists devote themselves to crustal deformation analysis since it plays a crucial role in assessing the potential of seismic and volcanic disasters. Measuring crustal deformation heavily depends on space geodetic techniques. A stable GGRF provides indispensable infrastructure for the accurate measurement.”

Dr. Hiroshi Munekane,
 Geospatial Information
 Authority, Japan

**Better interpretation
 of motions**

“The more rigorous and stable the reference frames, the better we can assess and interpret small scale motion of tectonic, volcanic, or Earth crust deformations due to ice thickness variations.”

Dr. Halldor Geirsson,
 University of Iceland, Iceland

Hazard monitoring

“Space Geodesy Group of KASI focuses on Global Geodesy detecting tiny variations of Earth’s shape and its rotation. Research field covers a wide range of precise positioning from determination of reference frame and Earth orientation parameters to natural hazard monitoring. The UN resolution on GGRF will be beneficial to connect the scientific issues up to national or regional agenda.”

Dr. Jungho Cho,
 Korea Astronomy & Space Science
 Institute, South Korea

**Securing networks
 and research**

“Geodesy contributions are today based on best effort. The UN resolution and actions following that, will help to secure the future of geodetic networks and research. In Finland we

PHOTO: KENNETH BAHR



ARCTIC: GPS campaign for monitoring crustal motion in Svalbard, Norway.

already achieved one milestone; a new VGOS radio telescope in Metsähovi. When reasoning for this, the UN resolution had a central role.”

Prof. Markku Poutanen,
 Finnish Geospatial Research
 Institute, Finland

Enhance warning systems

“The UN resolution to implement a global reference frame, along with data from Earth observing systems and GNSS are fundamental to addressing many scientific and operational challenges. NOAA uses highly accurate geospatial information in conjunction with numerous observing systems to model geophysical phenomena, improve weather forecasts, enhance early warning systems and for improving coastal zone management.”

Dr. Neil D. Weston,
 National Geodetic Survey,
 National Ocean Service, NOAA, USA

Improved Arctic research

“The UN resolution on Geodesy will help to improve and maintain the geodetic infrastructure in the Arctic. The new geodetic Earth observatory in Ny-Ålesund on Svalbard will combine several geodetic measuring

techniques to map the Earth’s motion more accurately. In Svalbard a dense network of GNSS stations is important for future studies. This enables improved research on key elements for sustainable development like sea-level changes and ice mass melt.”

Dr. Halfdan Pascal Kierulf,
 Norwegian Mapping Authority’s
 Geodetic Institute, Norway

**Boost the use of accurate
 geo-referencing techniques**

“As a Geodesist involved in several scientific and technical collaborations in different parts of the world, in particular Africa and Asia, I am convinced that the UN resolution will create a momentum that will be used to boost the use of accurate and modern geo-referencing techniques to improve our knowledge about the Earth.

Many countries particularly in Africa and Asia are still using national reference frames created during colonial times. My experience is that such frames are one of the limitations for the development of the countries, by providing an inaccurate position on the ground.”

Dr. Rui Fernandes,
 University of Beira Interior,
 Portugal

