Kartverket

2. July 2013

UN mandate for further development of global geodetic Earth observations

Geodesy is the basis for Earth observation. It is the science of the Earth's shape, motion, gravitational field and changes to these. Geodesy is fundamental for monitoring climate change, for mapping, navigation and universal timing. Geodesy is in principle dependent on contributions from all nations around the globe.

Geodesy is based today on a "best efforts" principle; a voluntary global collaboration between scientists and mapping agencies. Advances accordingly depend on what individual researchers and players can achieve in their own countries. In such circumstances, progress is naturally strong in the industrial world and weak in developing nations. The time has accordingly come to elevate global geodetic collaboration to the United Nations in order to secure a more efficient and optimum development of the critical infrastructure which this actually represents for the international community.

Earth observations are conducted today from outer space. It is far simpler to monitor the melting of great icecaps, the global rise in sea level, and changes to the Earth's movements and mass balance from above. Satellite technology has accordingly provided new and valuable knowledge. But information about current trends is not good enough to observe developments with sufficient precision and to create a reliable picture of the future.

Geodesy has traditionally formed the basis for geospatial data. Technological progress in recent decades has turned it a science which now provides the foundation for all satellite technology. Operating satellites in orbit around the planet is impossible without knowing how the Earth rotates in space.

The precision of Earth observations must be increased in the time to come. That calls in turn for a global improvement in geodetic techniques, as the global infrastructure is old and requires modernization. A system of geodetic observatories with an ideal distribution around the world is needed. Without that, it will be impossible to observe developments with the degree of precision required to take account of and adopt preventive measures for areas threatened with flooding. The importance of working together and global collaboration are key elements, as no country can increase the precision of global geodetic Earth observations alone.

A UN mandate could encourage more countries to make a commitment to global geodetic cooperation, and help achieve a sustained improvement in the reference frame and infrastructure for global Earth observations.

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