The GMOS contributions to GEOSS

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Abstract. The Group on Earth Observations (GEO) is coordinating efforts to build a Global Earth Observation System of Systems (GEOSS). GEOSS is aimed at providing decision-support tools to a wide variety of users. These tools are addressed toward nine social benefit areas (SBAs) that are of critical importance to society. These nine areas are addressed through the GEOSS Common Infrastructure. To support the implementation of the GEOSS Work Plan, two tasks within the Health SBA have been launched: i) HE-02-C1: the Global Mercury Observation System and ii) HE-02-C2: the Global Monitoring of Persistent Organic Pollutants, Emerging Contaminants and Global Change Indicators.
The task HE-02-C1aims to:

- Increase the availability of Earth observation and information needed to both track pollutants and anticipate changes to the environment.
- Harmonize standard operating procedures for monitoring pollutants and their compounds in air, water, soil, sediments, vegetation and biota.
- Understand the temporal and spatial patterns of pollutant transport, deposition to, and evasion from, terrestrial and aquatic ecosystems.
- Support the validation of regional and global atmospheric pollutant models for use in evaluating different policy options.
- Evaluate the effectiveness of international efforts to reduce pollutant releases.

The overarching goal of HE-02-C1 is the development of a global observation system for mercury, realized by harmonizing standard operating procedures for monitoring mercury and its compounds in air, precipitation samples, surface water, soil, sediments, vegetation and biota. The sharing of data from this network, which allows access to data that is comparable, long-term, and from a large number of ground-based and off-shore sites, will help us understand temporal and spatial patterns of mercury transport and deposition to, and evasion from, terrestrial and aquatic ecosystems. The data produced (at 40 ground-based sites, off-shore locations throughout the oceans, and in the UTLS) will support the validation of regional and global atmospheric mercury models for use in evaluating different policy options for reducing mercury pollution and its impacts on human health and ecosystems. The data sets, the validated models, and the interoperable system that is produced within this program, will support the policymaking process in the framework of UNEP Governing Council activities, and in the UNECE-LRTAP convention. The task builds upon contributions from, among others, the Global Mercury Observation System (GMOS) project, the UNEP Mercury Programme, the Hemispheric Transport of Air Pollutants Task Force (TF HTAP), the European Monitoring and Evaluation Program (EMEP), the MercNet/AMNet initiative in the USA, the CAMNet in Canada, and other international monitoring and modelling efforts.

Key words: health, mercury pollution, global monitoring, infrastructure