Geospatial Expertise: A Lever for Operational Monitoring of Sustainable Development Goals

Stéphane Roche (Canada)

SUMMARY

Successive reports by the Intergovernmental Panel on Climate Change (IPCC) clearly highlight the major impacts of human activities on climate change and, more broadly, on the resolution of major global dynamics. The scale of these changes, and especially their acceleration, is such that they would constitute a new geological force capable of affecting the Earth's ecosystem and causing signicant imbalances. In keeping with the Millennium Development Goals, United Nations Member States adopted, in 2015, after two years of negotiations, 17 Sustainable Development Goals (SDGs), under the umbrella of Agenda 2030. The Sustainable Development Goals propose 1691 target goals, common to all involved states, to be reached by 2030. The SDGs are built around the world's great challenges, offering more inclusive leverage and perspectives, such as eradicating poverty in all its forms and in all countries, protecting the planet, and ensuring prosperity for all. Together, they correspond to the three pillars of sustainable development. As long as the SDGs remain poorly understood by the public, the difficulties in locally implementing these rather "macro" goals remain considerable, despite the recent United Nations deployment of a series of simple actions, including a mobile application and even a chatbot for the general public.

In the matter of SDG implementation and monitoring scales, geospatial data and expertise play a key role. When viewed up close, most of the SDGs and their associated targets are of a spatial or minimal nature and require a geographical perspective to be effectively understood. On at least two levels, geospatial expertise is an essential lever for the operational monitoring of sustainable development goals. Geospatial data challenges are twofold here: 1) the availability of quality data and the integration of multi-source and multi-scale data (matching); and 2) the combinations of vector and geostatistical data are also essential means of multi-scalar monitoring. The United Nations has, for instance, published 17 maps for 17 goals that illustrate, for each of the SDGs, the relevance of key indicator map monitoring. These illustrations continue the enormous work

---

Geospatial Expertise: A Lever for Operational Monitoring of Sustainable Development Goals (13646)
Stéphane Roche (Canada)

FIG Congress 2026
The Future We Want - The SDGs and Beyond
Cape Town, South Africa, 24–29 May 2026

produced by a team of the International Cartographic Association (ICA) in collaboration with the United Nations in the context of Mapping for a sustainable world. Building target monitoring indicators by multivariate aggregation, clustering, and spatially constrained classification is certainly among the most useful methods for monitoring the SDGs at local scales (large scales) while maintaining the possibility of a coherent perspective at more macro scales (small scales). This is one of the main objectives of the Canadian Observatory on Local Governance of the SDGs project, which is being carried out by the Institute of Environment, Development, and Society (EDS) of Laval University and funded by the federal government. This presentation aims to present the main results of this project. In doing so, it highlights to what extent geospatial expertise constitutes a unique lever for localizing and prioritizing the SDGs at local and regional scales.

_____

Geospatial Expertise: A Lever for Operational Monitoring of Sustainable Development Goals (13646)
Stéphane Roche (Canada)

FIG Congress 2026
The Future We Want - The SDGs and Beyond
Cape Town, South Africa, 24–29 May 2026