

UNESCO Chairs Seminar

Using Modern Geospatial Technologies in UNESCO Designated Sites for Sustainable Futures

Date and time: Wednesday 23 July 2025, 15:00 to 16:30 (Paris time)

Languages: English, French and Spanish

Format: Zoom – [Please click here to register](#)

Achieving the [United Nations' 2030 Agenda for Sustainable Development](#) remains a pressing global challenge. Despite international commitments, progress is increasingly hindered by limited awareness, inadequate data, and insufficient mechanisms for monitoring and evaluation. The [United Nations' 2024 SDG Progress Report](#) underscores this urgency, highlighting troubling setbacks such as rising poverty, widening socio-economic inequalities, and accelerating climate impacts, factors that collectively threaten to derail the 2030 Agenda and the implementation of global agreements such as the Kunming-Montreal Global Biodiversity Framework and the Paris Agreement. Meanwhile, in 2025, financing for development is under pressure.

Within this broader context, the many UNESCO-designated sites, including Biosphere Reserves, Global Geoparks and World Heritage Sites hold significant potential to serve as role models of sustainable development, particularly as learning places, mediators and education actors. They are also key contributors to the implementation of global climate, biodiversity and culture frameworks, offering locally grounded, scalable nature-based solutions. However, these sites also face acute vulnerabilities. Their outstanding universal value and often fragile ecological and geographical contexts expose them to the adverse effects of climate change and environmental crises. Moreover, many of these sites encounter specific sustainability challenges, due to resource constraints, conflicting priorities between conservation and development, and inadequate capacities to implement sustainable practices. Balancing preservation mandates with the imperative for economic development and community engagement often complicates efforts to fully align site activities with broader frameworks such as the Sustainable Development Goals (SDGs).

To address these issues, it is crucial to understand all these challenges and identify corrective measures. Modern geospatial technologies offer promising solutions to assess and understand these challenges, giving stakeholders a powerful tool to manage these protected sites. The data required to support UNESCO-designated sites, as well as the information systems to manage, process, and interpret such data, are complex. Therefore, it is necessary and advantageous for all data to be geo-referenced, allowing the integration of different data layers across various scales and timeframes. However, the effective and efficient application of these technologies relies heavily on the skills and capabilities of those using them. As such, assessing the current state of geospatial technology-related skills and competencies among UNESCO-designated site managers and stakeholders is essential. This analysis is needed to identify gaps and inform the development of tailored capacity-building initiatives.

GIS-based technologies have become increasingly important in heritage management, providing dynamic systems for research, visualisation, modelling, and virtual experiences. Modern sensors on satellites, aircraft, and local devices collect vast geo-referenced data, which can be analysed with Big Data and AI to assess and visualise changes over time. While traditional methods like censuses often lack accurate socio-economic data, citizen science and new technologies such as smartphones and social media are increasingly enabling the collection of precise, geo-referenced socio-economic information. Moreover, UNESCO is increasingly leveraging these technologies to support its mandate, while also providing geospatial tools and resources to site managers and other stakeholders at designated sites. These data are vital for stakeholders at UNESCO-designated sites to develop scalable and sustainable solutions to local and global challenges.

One example is the [UNESCO Sites Navigator](#), the dedicated Geographic Information System (GIS) for UNESCO's key designated sites around the globe – World Heritage, Biosphere Reserves, Global Geoparks. Officially launched during the [World Heritage Committee session](#) on 9 July 2025, the *UNESCO Sites Navigator* offers a comprehensive monitoring tool that visualizes verified, georeferenced boundaries of UNESCO designated sites. It also brings together several relevant datasets, supporting enhanced monitoring through remote sensing and providing deeper insights into the sites, as well as an automated alert system, offering daily and weekly updates derived from near real-time satellite and geospatial data.

This online Seminar entitled **“Using Modern Geospatial Technologies in UNESCO Designated Sites for Sustainable Futures,”** will be of particular interest to managers of UNESCO-designated sites (i.e., Biosphere Reserves, Global Geoparks and World Heritage Sites) as well as associated members and stakeholders involved in the management and stewardship of these sites, academics and youth engaged in geospatial technologies, and UNESCO Chairs with an interest in the application of modern geospatial technologies. The Seminar provides a platform for critical dialogue regarding the strengths and limitations of contemporary geosciences, capacity building, education, and associated technologies. It will explore how these elements can collectively contribute to the achievement of the Sustainable Development Goals (SDGs) and International Environmental Agreements. Particular emphasis will be placed on fostering collaboration among UNESCO-designated sites and UNESCO Networks, enabling stakeholders to leverage modern geospatial technologies and related tools more effectively. By capturing and sharing lessons from specific cases, the Seminar will also contribute to a broader understanding of how modern geospatial technologies can support the achievement of the 2030 Agenda, the Kunming-Montreal Global Biodiversity Framework and the Paris Agreement and help shape more sustainable futures, both within and beyond UNESCO-designated sites.

Provisional Agenda

Using Modern Geospatial Technologies in UNESCO Designated Sites for Sustainable Futures Wednesday 23 July 2025, 15:00 – 16:30 (Paris time)	
15:00-15:10	Welcome and Opening Remarks Antonio Abreu , Director, Division of Ecological and Earth Sciences, UNESCO
15:10-15:25	Keynote Alexander Siegmund , Chairholder, UNESCO Chair on Observation and Education of World Heritage and Biosphere Reserve, Heidelberg University of Education, Germany
15:25-16:10	Panel discussion Moderator: Fernando Avakian , Project Officer, World Heritage Centre, UNESCO <ul style="list-style-type: none"> • Helena Maria de Oliveira Freitas, Chairholder, UNESCO Chair on Biodiversity Safeguard for Sustainable Development, University of Coimbra, Portugal • Mario Hernandez Valdez, Vice-President, International Society for Digital Earth/Chair, Special Interest Group Earth Observation for Heritage – European Association of Remote Sensing Laboratories • Leonard Mubalama, Professor at the Institute of Rural Development, Bukavu, Democratic Republic of Congo • Alexander Siegmund, Chairholder, UNESCO Chair on Observation and Education of World Heritage and Biosphere Reserve, Heidelberg University of Education, Germany
16:10-16:25	Comments and Q&A Moderator: Martin Delaroche , Project Officer, Man and the Biosphere (MAB) Programme, UNESCO
16:25-16:30	Closing remarks Keith Holmes , Research Coordinator/UNITWIN, Future of Learning and Innovation Division, UNESCO

**** [Register here](#) ****