The GREAT | Green Deal Data Space Project Announces Selection of 5 Reference Use Cases and Ending Phase 1 of the Project.

Milan, 24.07.2023 - The GREAT | Green Deal Data Space project, funded by the Digital Europe Programme, has made significant progress in its mission to promote sustainable and data-driven solutions for the European Green Deal. As part of its first phase, the project has selected five reference use cases that demonstrate the potential of data integration and collaboration in addressing environmental challenges. These use cases are: GOS4M, EMODnet, EPOS, BIOGIS360, Hydrology Use Case (composed of "large scale hydrology" and "seasonal forecasting of water resources").

Reference Use Cases

[GOS4M](#) (Consiglio Nazionale delle Ricerche - CNR): GOS4M is a Flagship initiative of the Group on Earth Observation (GEO) aimed at supporting the Minamata Convention on Mercury and addressing mercury pollution at various geographical scales. It is aimed to federate data collected from various regional and global scale monitoring networks on mercury (Hg) and to develop interoperable policy tools and services for decision-makers. The GOS4M Knowledge Hub (GOS4M-KH) available online, offers a unique fully integrated multi-media modeling system to evaluate different patterns of Hg fate in the global environment including deposition fluxes to ecosystems, Hg bioaccumulation in the marine biota, human exposures and investment costs associated to implemented cost-effective measures for reducing Hg emissions to the atmosphere.

EMODnet (European Marine Observation and Data Network): EMODnet is an EU public marine data service of the EC (DG MARE), providing a European focal point and trusted source of *in situ* marine data and data products. It is made possible by a large network of experts who work with diverse data collectors, providers, and data management initiatives to aggregate, standardise and harmonise *in situ* marine data from the surface ocean to seafloor, spanning hundreds of parameters across the thematics of bathymetry, biology, chemistry, geology, physics, seabed habitats and human activities. In addition, EMODnet produces free and open access to added value data products, ranging from composite maps to Digital Terrain Models, and hosts National Maritime Spatial Plans from EU Member States, offering these in geospatial formats. EMODnet is a key infrastructure for the future EU Digital Twin Ocean (DTO), working in close collaboration with the Copernicus Marine Service.

EPOS, the European Plate Observing System, is the pan-European distributed research infrastructure aimed at ensuring the sustainable and universal use and reuse of multidisciplinary solid Earth science data and products (e.g. seismological, volcanological, geological, satellite data). By coordinating diverse research communities, EPOS integrates and makes interoperable heterogeneous data and products, thus supporting cross-domain research and innovation.

BIOGIS360 (iptsat in collaboration with the Department of Environmental Biology, La Sapienza University of Rome): BIOGIS360 is a comprehensive tool for biodiversity monitoring, providing authoritative information on biodiversity worldwide. It offers companies valuable insights and aids in decision-making processes, helping them integrate considerations for biodiversity conservation and environmental impact mitigation.

In the **large-scale hydrology use case,** the focus is on studies and assessments that use large-scale hydrological data to study past and future trends in fresh-water resources and inform long-term policy decisions. Large-scale hydrology provides vital data that enables us to understand the historical trends in water resources around the world, especially in regions where these resources are used unsustainably. In the seasonal forecasting of water resources use-case, the focus is on operational water management: short to medium-term decision-making that influences the impact that floods and drought have on society. Hydrological ensemble predictions are an essential part of this decision-making process. The hydrological data provides ensemble forecast data that provides information on the potential river discharges for the coming days to weeks.

These selected use cases showcase the potential of data-driven approaches in addressing environmental challenges, fostering sustainability, and supporting the objectives of the European Green Deal. By integrating and leveraging data from various sources, these initiatives provide valuable insights for policymakers, researchers, and stakeholders.

The GREAT | Green Deal Data Space project has actively engaged stakeholders and encouraged their participation through a call for use cases, which was launched in February 2023. The call invited various entities, including data consumers, data providers, and data intermediaries, to contribute to the project's objectives.

During the call for use cases, our primary focus was on selecting use cases directly aligned with the three key policy areas of the GREAT | Green Deal Data Space project: zero pollution, biodiversity, and climate change adaptation, which are already bringing value to the end users and contributing to the implementation of Green Deal. Additionally, most of the selected use cases represent a profile of a data exchanger, broker, or a data ecosystem, which provided future Green Deal Data Space with thorough overview of their lessons learned and good practices to follow. GREAT received numerous applications, and we hope to involve more stakeholders and their use cases in the second phase of the project.

The call provided multiple levels of engagement, allowing stakeholders to share their existing datasets, use cases, and insights on data gaps and access challenges.

	Overview of the selected reference use cases				
	GOS⁴M	**EMODnet**	**EPOS**	**BIOGIS**	**Hydrology**
EGD Strategic Action	-Zero Pollution (Air Quality) -Climate Change Adaptation -Biodiversity -Clean, Reliable And Affordable Energy -Transformation Of Agriculture And Rural Areas	-Zero Pollution -Climate Change Adaptation -Biodiversity -Clean, Reliable And Affordable Energy	- Climate Adaptation; - Clean, Reliable And Affordable Energy.	-Biodiversity -Zero Pollution	-Biodiversity -Zero Pollution -Sustainable Transport -Transition To Circular Economy -Financing The Transition -Farm To Fork -The Transformation Of Agriculture And Rural Areas -Towards A Modernised And Simplified Cap -Leave No One Behind (Just Transition)
Thematic Taxonomy	-Land -Built Environment -Marine And Maritime -Atmosphere And Climate	-Marine And Maritime	- Land - Built Environment- Disasters & Geohazard	-Marine And Maritime -Built Environment	-Built Environment -Marine & Maritime -Atmosphere & Climate -Security And Safety
Geographical scope	Global	EU and Global	European and Global scope	EU (mainly Italy)	Global
Key stakeholders	Global Mercury Observing System (GMOS) (https://www.gmos.eu/) Environment and Climate Change Canada (ECCC) (https://open.canada.ca) Atmospheric Mercury Network (AMNet) (https://nadp.slh.wisc.edu/networks/atmospheric-mercury-network/) EuroGEO Showcases: Applications Powered by Europe (e-shape) (https://e-shape.eu)	Academia, marine research institutes, private companies, NGOs, civil society, public authorities and government agencies, as well as marine data centres	Scientists, IT experts Governments and Society	Private sector (companies in the energy, construction domains) and public sector (administrations)	Policy makers Water managers Other scientists

	Environmental Exposure Assessment Research Infrastructure (EIRENE) (https://www.eirene-ri.eu) Towards new frontiers for distributed environmental monitoring based on an ecosystem of plant seed-like soft robots (I-seed) (https://iseedproject.eu/) UNEP Partnership on Mercury air transport and fate research (UNEP-GMP) (https://www.unep.org/globalmercurypartnership)				
Links:	http://www.gos4m.org/ **Knowledge Hub** **Data catalog** **GEO Portal Community** **GEO Knowledge Hub**	EMODnet portal homepage EMODnet central map viewer EMODnet central searchable metadata catalogue: EMODnet ERDDAP server EMODnet web services EMODnet tools and guidelines EMODnet use cases EMODnet data and data product portfolio	Main website: https://www.epos-eu.org/ EPOS Data Portal: https://www.epos-eu.org/dataportal EPOS Data Portal Open source: https://epos-eu.github.io/epos-open-source/ Specific Thematic portals available at this URL: https://www.epos-eu.org/tcs	https://www.iptsat.com/biogis/	PCR-GLOBWB hydrological model (https://globalhydrology.nl/research/models/pcr-globwb-2-0/) Global Flood Awareness System (https://www.globalfloods.eu/) Multi-model hydrological seasonal predictions system (ULYSSES, https://www.ufz.de/index.php?en=47367) The World Water Map, a project that aims to identify hotspots of water scarcity around the world: https://worldwatermap.nationalgeographic.org/ ISI-MIP project (https://www.isimip.org)

GREAT worked with the selected use cases to identify their needs regarding the future GDDS, pinpoint the data gaps, and challenges related to data access.

"A platform where we can store and share data, with opportunities to interact with the data on the platform. This would allow future users to download the data as a whole, but also extract parts of the archive (and thereby reduce file sizes) to be able to analyze locally". – Niko Wanders, Utrecht University

Their feedback was collected over online meetings with consortium experts, workshops with broader community, and through dedicated questionnaires and templates. Based on the received information, consortium developed their initial deliverables which will be outlining preliminary vision for the GDDS.

"We expect the Green Deal Data Space to foster collaboration with relevant initiatives and provide access to dedicated funding programs. This will enable us to cooperate on shared environmental goals and leverage resources for innovative projects and research activities". - Daniele Bailo, EPOS ERIC

Figure 1 GOS4M Meeting, March 2023

Phase 2

In Phase 2 of the GREAT | Green Deal Data Space project, we are excited to continue expanding the portfolio of Reference Use Cases by selecting an additional five use cases. Building upon the initial set of use cases, this next phase presents an opportunity to explore new examples and connect with a broader community of stakeholders. We are eager to discover innovative ideas and diverse perspectives that will contribute to the development and implementation of the GDDS.

By actively seeking new use cases, we aim to address a wider range of challenges and opportunities related to biodiversity, zero pollution, and climate change. We encourage data consumers, data providers, data intermediaries, and other stakeholders to participate in this phase and contribute their valuable insights and experiences. Through this collaborative approach, we can ensure that the selected use cases represent the needs and priorities of the GDDS Community as a whole.

As we move forward, the GREAT | Green Deal Data Space project remains committed to fostering an inclusive and collaborative environment where stakeholders can actively engage, share knowledge, and contribute to the advancement of the project. We are excited about the possibilities that Phase 2

brings and look forward to the continued growth of the GDDS Community, as we collectively work towards realizing the goals of the European Green Deal.

The GREAT | Green Deal Data Space project aims to create a more defragmented, interoperable, and catalogued dataset across the environmental thematics covered by the European Green Deal, including biodiversity, pollution, climate change, and hydrology. Through collaborations with organizations and institutions across Europe, the project strives to unlock the potential of data in driving sustainable solutions and fostering innovation.

To learn more about the selected use cases and the GREAT | Green Deal Data Space project, please visit the project's website at www.greatproject.eu

About the GREAT | Green Deal Data Space Project:

The GREAT | Green Deal Data Space project, funded by the Digital Europe Programme, aims to leverage data and digital technologies to support the goals of the European Green Deal. By promoting collaboration, data sharing, and innovation, the project seeks to accelerate the transition to a sustainable and green economy. The project brings together stakeholders from academia, research institutes, government agencies, and industry to develop solutions for environmental challenges through data integration and analysis.

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