Towards a Single Information Space for the Environment

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Abstract

Growing awareness of general patterns of unsustainable growth, and the need to address environmental issues in relation to the socio-economic context with more holistic approaches puts increasing pressure on our capacity to handle complexity, to bridge different disciplines, communities and actors, and to integrate diverse knowledge systematically. New partnerships are progressively set up to address this challenge such as the Group on Earth Observations (GEO) which aims at building a coordinated and sustained Global Earth Observation System of Systems (GEOSS) and for which a key contribution will be the European GMES initiative for Global Monitoring of Environment and Security.

Environmental legislation in Europe is progressively introducing higher requirements for common environmental monitoring and reporting in order to guarantee higher degree of implementation and assessment. Good assessment requires good indicators, and good indicators require good data and overall agreement on how to interpret these numbers. Hence, the reinforced move towards common monitoring protocols, common sampling techniques, common semantics and converging information and communication technologies (ICT) across European Member States.

These ongoing trends in partnership, initiatives and legislation illustrate the growing need to develop synergies between existing environmental resources at various scales. These resources encompass all kind of observations being from active or passive, wireless or wired, fixed or mobile, remote or in situ sensors, interconnected ground infrastructures for, data sharing, processing and analysis, value added information production, up to systems for alert and decision-making. This creates opportunities never met before for ICT deployment.

The ICT challenge consists in removing the many information islands existing in Europe and in building - in the context of a digital Europe - a dynamic and collaborative space in Europe, not only for seamless data access to public authorities, businesses and the public at large, but also for interoperable environmental services. This is the aim of the "Single Information Space for the Environment in Europe" which is driving Community research and deployment activities managed by Information Society and Media Directorate-General of the European Commission in the field of ICT for the environment. Such a concept of a smart and real-time connectivity between multiple resources (e.g. data, information, knowledge, services and tools) would allow seamless cross-system search, as well as cross-border, multi-scale, multi-disciplinary data acquisition, pooling and sharing. Furthermore, it would allow for service-chaining on the Web, thereby stimulating data integration into innovative value-added Web services. This would allow for new business models in Europe and reinforce growth in the Environmental Goods and Services (EGS) sector.