

PROMOTING GEODIVERSITY IN THE SUSTAINABLE MANAGEMENT OF NATURE

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Keywords: *Geodiversity, sustainability, natural capital, ecosystem services, geoparks*

Workshop: Geo-Education

The diversity of nature, which includes biotic and abiotic elements, is the key for the sustainability of human society. Many people are now aware of the importance of biodiversity not only because of its intrinsic value but also in terms of ecosystem services, given its role in human well-being. The ecosystem services have been categorized in regulation, supporting, provisioning and cultural services and evaluated exclusively based on the contribution of living nature. Also national agreements and policies, including the Rio Earth Summit and UN Sustainable Development Goals, are heavily weighted to biotic nature and barely include any non-living, abiotic nature or “geodiversity” elements. Furthermore, nature conservation policy and national and regional levels (e.g. EU), usually excludes geodiversity from any effective conservation action. In fact, modern society benefits greatly from living on a geodiverse planet but this reliance is not reflected in public understanding or public policy. Using the successful model of promotion of biodiversity, the promotion of the role of geodiversity to sustainable development can be also based on “natural capital” and “ecosystem services” concepts. Geodiversity contributes to “natural capital”, defined as the “world’s stocks of natural assets, which include geology, soil, air, water and all living things”, sometimes also referred to as environmental assets that provide benefits to humanity. Geodiversity contributes to ecosystem services, based on its scientific, educational, economic, cultural, and aesthetic values. Provisioning services refers to extractable natural resources, the economic base of our modern society, which should be carefully managed. Among thousands of examples that can be presented on the importance of this service, it could be mentioned that the ubiquitous smartphone contains over half the non-radioactive elements in the periodic table, all of which are extracted from the lithosphere, a fact that the public is barely aware of. Non-extractable natural resources provide numerous benefits. Examples include the water cycle, the rock cycle, the carbon sequestration by rocks, regulation of soil erosion and regulation of natural disasters (regulating services), habitat provision, biodiversity support, platform for infrastructures (supporting services), hydrotherapy, artistic inspiration, and knowledge of history and evolution of the Earth and life (cultural services). Thereby, non-extractable resources generate scientific, educational and economic uses (geoheritage), managed by geoconservation. In addition to geoheritage and its scientific value, geoparks provide examples that address many other benefits provided by geodiversity for human well-being. The approach to these benefits should stress the importance of the sustainable management of geodiversity. The finite character of non-renewable resources and impacts of their extraction should be always emphasized, as well as the conservation of renewable resources ensuring their sustainable use.