

IGGP and Geoscience for Future Society: Exploring a Framework for Managing Earth Heritage

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This paper reviews potential challenges facing the newly emergent IGGP from the viewpoint of geoconservation and argues for the need of a universal framework to address these issues. In the adoption of the IGGP, UNESCO has created a new formal program for heritage management for the first time in about four decades. The IGGP is expected to become a vital part of the toolkit to achieve Sustainable Development Goals (SDG) at the global level. While other similar global-level UNESCO programs such as the World Heritage Site (WHS) and Biosphere Reserves (BR) primarily operate from the viewpoint of biological diversity, the global geoparks program focuses on the earth as a whole, and the abiotic processes and formations in particular. However, while international heritage management programs such as the WHS and BR are backed up by strong research and conservation initiatives (example: the Convention of Biological Diversity or CBD), which in turn are based on the realization that biological diversity is being degraded at a rapid pace—geoparks do not currently have similar international frameworks for their activities. A major challenge is that even local societies are often not aware of the rapid degradation of resource reserves, extensive fragmentation of landscapes and loss of landforms that inhibit geological processes. It has been argued by scientists like Crutzen (2002) that humanity has propelled the planet to a new geological age of Anthropocene where humans are the dominant agents of planetary change. This requires scientists and planners alike to come together and address change and conserve the planet's dynamic processes wherever possible. While geoparks currently attach value to important geological 'formations', this alone will not be enough and scientists should come together to attach value to earth 'processes' in order to maintain their integrity. Of course this leads to challenges such as hazard or risk management as earth processes can be disruptive to life and property. But the IGGP should nevertheless provide geoparks strong incentives to understand global geological processes and their interconnectivity. It is proposed that a tentative framework can be derived from the works of Christopherson (1991) and Gray (2013), which explore 'geosystems' and the 'intrinsic value of geodiversity' as analytical and ethical frameworks, respectively.