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Author: Ms. Milica Milosev  
Econnects, Serbia

## SPACE-BASED TECHNOLOGY FOR ADDRESSING CLIMATE CHANGE AND BIODIVERSITY LOSS - AN ENVIRONMENTAL PERSPECTIVE

### Abstract

Climate change with its complexity is one of the most pressing issues of the twenty-first century, greatly affecting all aspects of life on Earth, from the environment to human society, by disrupting national economies and affecting lives, costing people, communities and countries. People are experiencing the significant impacts of climate change, such as changing weather patterns, rising sea levels, extreme weather events, deforestation, and biodiversity loss. While often treated separately, biodiversity loss and climate change are inextricably linked and mutually reinforcing problems. The variety of the Earth's living species is declining at an alarming rate due to human activity, from habitat degradation to the emission of greenhouse gases resulting in climate change. Biodiversity loss poses an existential threat to ecosystems and the global economy. Therefore, conserving biodiversity is one of the most important climate actions that should be taken. The importance of conserving the life of land was recognized and implemented as a Sustainable Development Goal, SDG 15 in the 2030 Agenda established by United Nations. SDG 15, Life on Land, together with SDG 13 Climate Action are working together on protecting and restoring terrestrial ecosystems, integrating ecosystem and biodiversity values into national and local planning and development processes.

Meeting targets of the UN 2030 Agenda demands an evidence-based approach to conservation practice and policy, requiring the analysis of high-quality monitoring data to inform decision-making and validate intervention strategies. Adopting a data-driven approach enhances explanatory understanding of current and emerging pressures on biodiversity whilst facilitating predictions of future species distribution and composition. To collect these necessary data space-based Earth observation (EO) has been playing a crucial role. The international EO community and many other initiatives are working on collecting, analyzing and processing data to support Paris Agreement and SDGs. However, developing countries and countries without space programs are still struggling to use the data to contribute to global goals.

The authors of this paper are working on establishing a space-based application and program for harvesting, processing and distributing environmental informational data for public use, research and education on national and international levels. In this paper, from an environmental perspective, the authors will investigate the best approaches to using scientific and data-based applications to target ecological and environmental concerns.