



A proposed Centre of Excellence for Conservation Remote Sensing

Background

A Centre of Excellence for Conservation Remote Sensing with competence for mapping, monitoring and landscape planning based at WWF-Germany in Berlin will build on the strong links between WWF and earth observation technologies in Europe and beyond.

Innovative research and applications for conservation science, with emphasis on monitoring, land use change, land use planning, monitoring reporting and verification (MRV) methodologies for REDD+, as well as habitat mapping, and rapid response for disasters or crises will support conservation work in globally important ecoregions. In addition, the centre will support essential capacity building for use of geo-spatial technologies throughout the WWF, along with partner universities and institutions.

A Remote Sensing Centre of Excellence will:

- host innovative research for remote sensing for monitoring, conservation, planning, while employing the latest EO technology (i.e. synthetic aperture radar, new Sentinel constellations).
- attract visiting scientists, students, staff from the WWF network to build capacity, expertise in conservation applications of RS
- develop comprehensive monitoring packages for WWF priority places, e.g. “State of Amazon” reports to measure impact, monitor success and target future strategies and investments
- host infrastructure for automated monitoring and processing linked to rapid land use change, fire and disaster alerts
- respond to various needs of the network and the conservation community in WWF priority landscapes, such as REDD MRV, land use planning, mapping, evaluation of sustainable forestry certification
- showcase a strong link to EU and other Space Centres, institutions, Universities, notably DLR, ESA, University of Würzburg, University of Bayreuth, Humboldt University, RapidEye gmbH and others
- be tied to WWF marketing and publication to sensitive, educate the public and WWF member base around space technology and new approaches to conservation

WWF-Space Agency Cooperation

A proposed Centre of Excellence based in Berlin will be a link to the large community of Space Agencies, Universities and remote sensing organizations in Germany, Europe and the US. WWF has been building partnerships for better access to data, innovative analyses and greater capacity. The advantages of these collaborations are numerous. The technical capacity of The German Aerospace Center for massive data processing, software design and satellite data management are an ideal complement to the wide WWF network which possesses local expertise and a public outlet to report on trends and drive action for conservation. The European Space Agency (ESA) is supporting pilot projects to showcase innovative applications of a large database of satellite imagery in the realm of ensuring sustainable forest management, developing green economy scenarios and mapping and evaluation of the provision of ecosystem services (water, carbon, soil retention). WWF also benefits from a partnership with Digital Globe Inc, the

world's leading distributor of commercial high resolution satellite imagery, making data more accessible for WWF projects, including a number of University students, assistants and volunteers who are eager to explore new datasets.

A Global Monitoring System

The heart of the Centre of Excellence lies in a global monitoring system for WWF and partner organizations to visualize, understand and act upon what is happening around the world. Humans and their related activities are impacting the planet at an unprecedented rate. From land use change, pollution, global warming, erosion, expanding infrastructure, natural disasters - there are environmental consequences to these activities that scientists, governments, and NGOs are struggling to study with on a daily basis. Therefore, the need for a world-wide monitoring system for monitoring human impacts is greater than ever before.

Synergies with other WWF Initiatives

Transparent forest monitoring for REDD+

Nations participating in the UN-REDD program to reduce carbon emissions from deforestation and degradation must provide transparent and robust mechanisms for monitoring forest cover and forest cover change. WWF is supporting several national REDD processes in several countries by engaging in national forest monitoring, carbon mapping and validating results in the field, as well as evaluating sustainable forestry by satellite.

Zero Net Deforestation and Degradation

With the launch of the International Year of the Forest, the WWF has declared an ambitious goal of Zero Net Deforestation and Degradation by 2020 in selected landscapes. WWF is using satellite imagery to monitor forest cover in focal areas, including deforestation, afforestation, and potentially, degradation. Results over time can be analyzed, and maps can be created for annual summaries of landscapes.

Decision support and drivers analysis

Land use change events, fires, or other data of interest (species presence locations) can be spatially associated with roads, rivers, elevation or any other spatial data. WWF is developing spatial models to determine what is essentially driving deforestation, in order to develop land use plans, evaluate future scenarios, and look at business as usual vs. conservation strategies.

Natural Disaster Response

Catastrophic disasters like tsunamis, earthquakes, cyclones have devastating impacts on human communities as well as the natural ecosystems they depend on. After catastrophic events, the satellite community provides open access to a number of valuable satellite data. The Centre of Excellence can be a crucial link to field offices who can use the satellite data and derived data on the ground, to help determine impacts on ecosystems, protected areas, animal corridors and identify possible human-wildlife conflicts that often result after a natural disaster.

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