



MAPME – Versatile analysis tool for big geospatial data in the context of sustainable development

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Natural ecosystems, especially primary forests, are impacted by the rapid expansion of human land use and global climate change, putting the most bio-diverse areas of our planet under threat. Large amounts of Earth Observation and analysis-ready data sets are made available (almost) for free. Yet, the usage of such data in conservation finance and policy making does currently not live up to its full potential. It is a complex endeavor to access relevant portions of Big Geospatial Datasets efficiently due to the high number of different data providers, formats and interfaces. Even more important, we need to generate information in an open and reproducible way to take informed decisions to allocate funds responsibly and maximize public goods and benefits

MAPs for Planning, Monitoring and Evaluation (MAPME) is an collaborative initiative based on OpenScience principles to leverage the potential of geospatial data for relevant actors in the development cooperation sector. The initiative is driven by Free and Open Software (FOSS) enthusiasts within German (KfW, GIZ) and French (AFD, IRD) development institutions. Together with our partner countries we are key decision makers in the allocation of the so-called Official Development Assistance (ODA). To bridge the “last-mile” gap between vast amounts of openly available geospatial data sets and productive monitoring applications, we have developed an OpenSource software used within our institutions.

The software is written in R and relies on the Geospatial Data Abstraction Library (GDAL) bindings provided by the ``sf`` and ``terra`` packages. It allows efficient analysis of large data collections on deforestation and greenhouse gas emissions such as Global Forest Watch (GFW). Focusing on expandability, everyone can include new in-house or open data sets, and custom analysis routines. Thus, the functionality can be extended to other sectors beyond forest monitoring. It opens the way to deliver crucial information on the state of ecosystems around the globe in a timely and reproducible way, allowing our institutions to make better allocation decisions.

We will present the MAPME Initiative and shed a light on our approach to developing applications based on FOSS. We will showcase first data solutions build by our partners on top of the framework, such as a geospatial impact evaluation of preventing deforestation and a dashboard for continuous monitoring of protected areas of the German development cooperation portfolio.