Food and Agriculture Organization of the United Nations

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Forest Adaptation Monitoring

The Way Ahead

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Monitoring and policy needs (here and now)

- Better data, better decisions? e.g. 10 y UN-REDD
- Need for (better) integration of measurable field, airborne and space borne RS parameters with practical (monitoring) solutions and policy implementation
- Support research needed in the domains of agriculture, food security, environmental degradation and hazards, inland and coastal waters, and forestry
- **Mitigation** efforts versus **adaptation**: new monitoring field to be explored, f. e. agricultural practices/management through Chl, N in soils, first attempt TOPC-CEOS indicators

What is adaptation (according to IPCC)?

Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities (IPCC, 2001a).

Adaptation monitoring

- Adaptation funding scaled up since Glasgow (UN Adaptation Fund around 850 Mi EUR, EU Adaptation Strategy, etc.)
- Annual **adaptation needs** for developing countries are estimated to reach USD **160-340 bn** by 2030 and USD **315-565 bn** by 2050, according to a UNEP report (2022)
- Major gap and a clear need for the development of **monitoring systems of adaptation measures**, which are essential to **track progress**.
- Monitoring and evaluation (**M&E**) is an essential aspect of successful climate adaptation. For the M&E system to be effective: need to be integrated and carried out throughout the whole project cycle
- Reporting, monitoring and review **through a national M&E system** is a crucial element of the NAPs.

FAO comparative advantage for (forest) adaptation monitoring

Open Foris initiative

www.openforis.org

Free and open source tools and methods for data collection, analysis and reporting

Arena

Online platform for survey design, data management, utilization and processing

Collect

Easy and flexible survey design and data management

Collect Mobile

Intuitive data collection and validation in the field

Calc

Efficient and collaborative data analysis and results dissemination

Collect Earth

Easy and flexible survey design and data management

Collect Earth Online

Online Land Monitoring tool for crowd-sourcing of augmented visually interpreted data

Earth Map

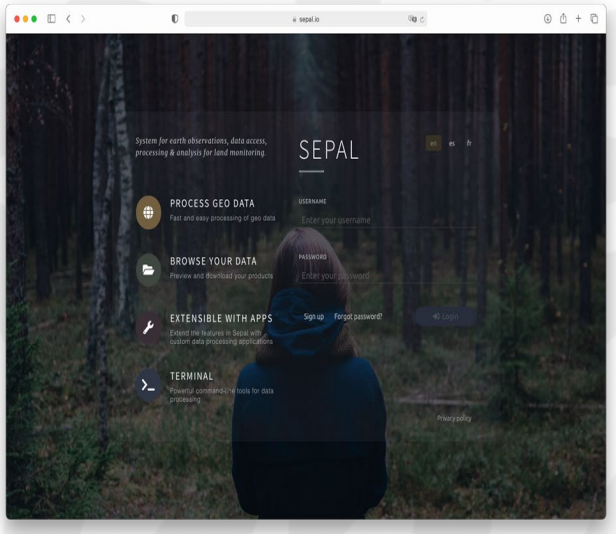
The power of Google Earth Engine without coding. A user friendly tool for complex land monitoring

SEPAL

System for earth observation, data access, processing, analysis for land monitoring

SEPAL: Earth Observation and cloud computing

- SEPAL is a cloud based platform for accessing, processing and analysing geospatial data for land monitoring
- SEPAL is free and open: anyone can register for access to its features: https://sepal.io
- All you need is an Internet connection to access the SEPAL website



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Integrating different platforms, data and tools

Layers by ecosystem components

- Soil
- Water
- Vegetation

Layers by climatic zone

- Subtropical
- Temperate
- Dry
- Tropical

Preparation of indices

- Link to modules in SEPAL

Frameworks

Indicators

Platforms

Data

& many others

Data are mapped considering the different indicators, criteria and frameworks
One dataset e.g. Land Cover can be used for various frameworks

Hand in Hand Geospatial Platform

Our wish list from policy side to EO and the Scientific community

- Support in mapping **changes in land cover/land use** and sustainable agricultural practices: ADAPTATION monitoring of measurable, tangible indicators
- Detect **soil properties** for action on improving soil health
- **Earth Observation with long data records** and data over remote places can help in
    - Validation of (climate and other) models
    - Process understanding
    - Importance of free and open EO data
- New products asked from end users and services in the domain of forestry: **distinction private and public end users and applications**

Forest adaptation Monitoring

- FAO through **expertise and experience** has worked on **adaptation planning of agriculture**, including guidance on monitoring and evaluation;
- FAO Forestry analysed actual **status of adaptation monitoring in the submitted NAPs**, as starting **basis for a new research and development stream** for FAO Forestry;
- Possible key partners could be the Adaptation coalition as well as GCOS/GEO;
- FAO has the comparative advantage of years of experience of close working with the countries as well as a proven development of innovative solutions.

This **innovative new area of work** would build on existing platforms and FAO tools as SEPAL and tightly connect to existing Forestry programs as e.g. UN-REDD.

- Proof of concept to be developed in a few pilot countries: contact us if interested!

Thank you.

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