

→ EARTH OBSERVATION FOR SUSTAINABLE DEVELOPMENT

Agriculture and Rural Development

Progress Meeting EO4SD Agriculture Cluster
4-5 October 2017 | ESRIN, Frascati, Italy

Effective management and evaluation of rural development and sustainable land and forestry management projects in Burkina Faso

Eva Haas, GeoVille



“Burkina Faso’s natural resources are being degraded primarily by deforestation, expansion of agricultural land, and grazing, all of these factors are being amplified by climate change .”

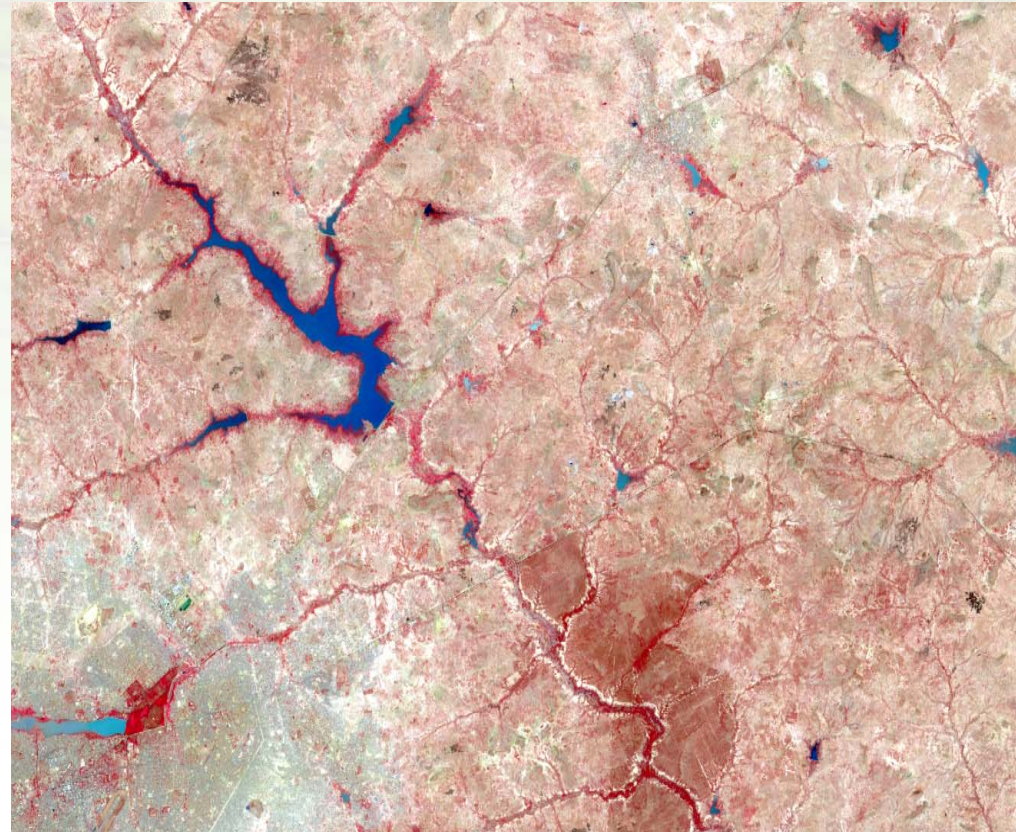
Ian Bannon, Acting World Bank Director for Sustainable Development in the Africa Region.



How can Earth observation contribute?



Even though the World Bank and IFAD support Burkina Faso to tackle these issues from different angles, their key information requirements about the state and evolution of country's natural resources are similar.



Targeted MDBs programs and projects



The Sahel and West Africa Program (SAWAP) in Burkina Faso

SAWAP is the World Bank and GEF's contribution to the Great Green Wall Initiative, implemented in Burkina Faso through the Third Community-Based Rural Development Project (PNGT-2/3) supported by the Sahara and Sahel Observatory (OSS).

The Forest Investment Program (FIP / PIF)

WB DEC together with the African Development Bank support Burkina Faso's REDD+ strategy assisting in preparing the country for access to the international carbon market.



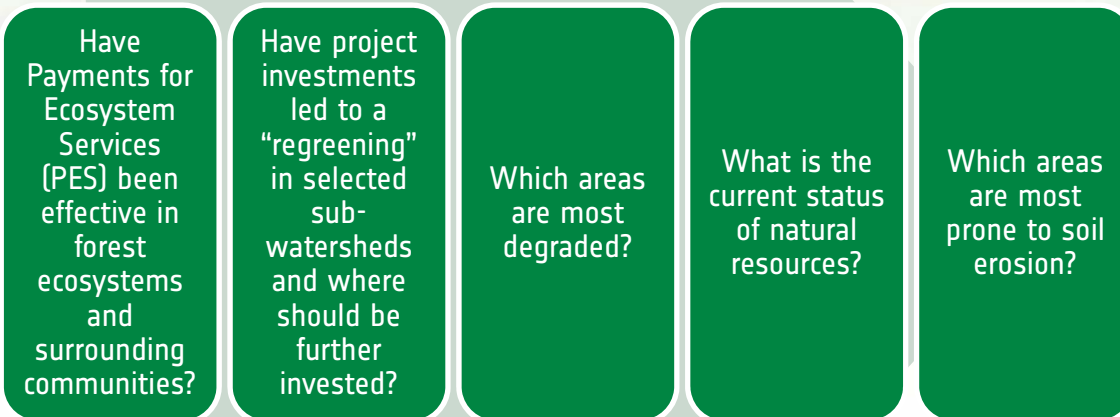
The Integrated Approach Pilot Program on Food Security in Burkina Faso (IAP-FS) implemented through the Neer-tamba project

Operating in Burkina Faso for three decades, IFAD is scaling up activities under previous projects in accordance with the strategic priorities set forth in the Country Strategic Opportunities Programme (COSOP)

Common local stakeholders

- Ministry of Agriculture and Water Resources
- Ministry of Environment and Sustainable Development (DCIME division)

Key questions and fitting EO4SD services



Land cover change and ecosystem services mapping
EO-based products and services including agricultural production areas and tree cover

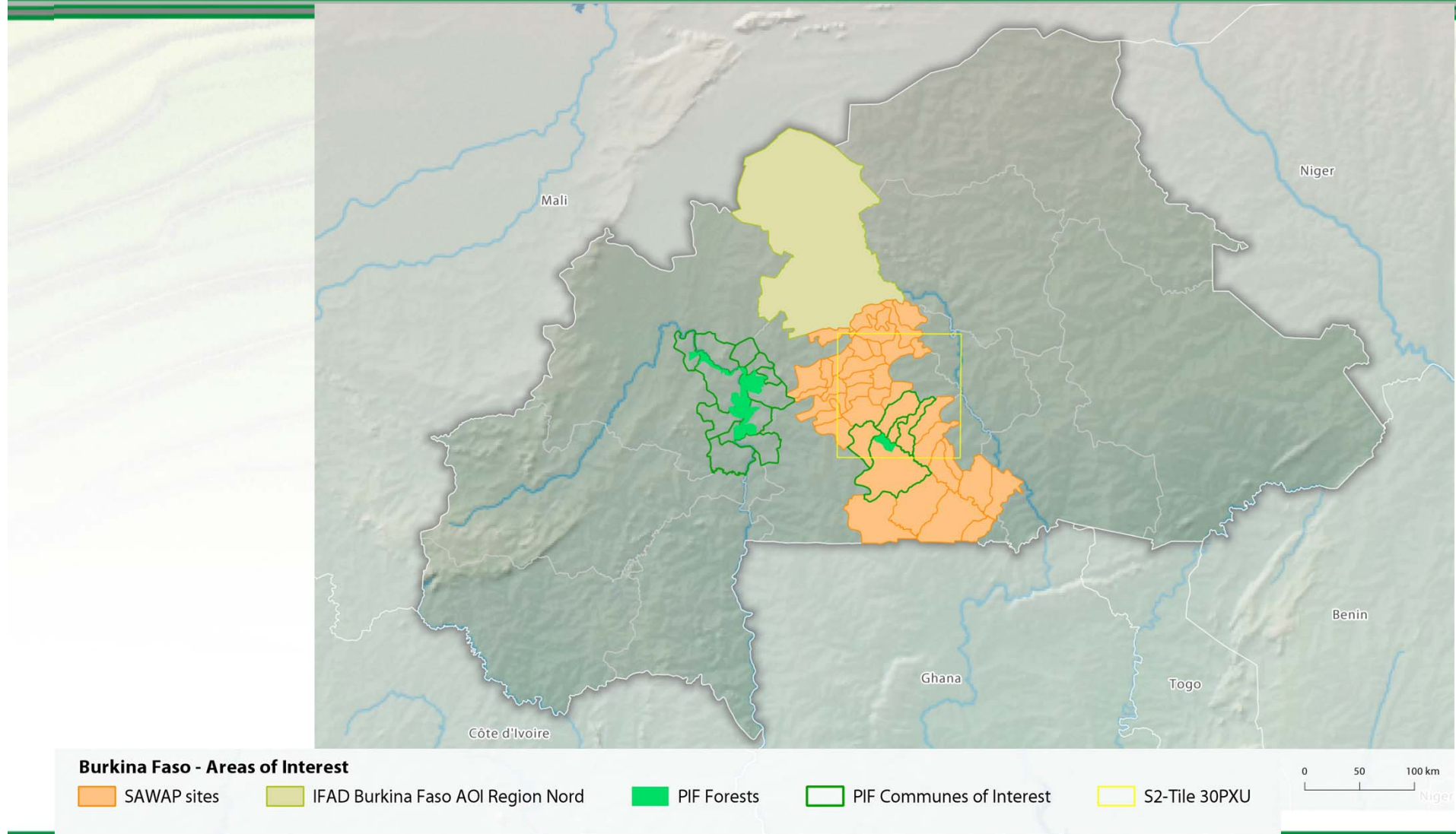


Tools to assess land degradation and environmental conditions
EO-based products and services including water-based soil erosion, vegetation trend analyses, land degradation assessments



Environmental and Social Safeguards (Monitoring and Evaluation)
EO-based products and services as well as geo-information products to identify the effectiveness of investments

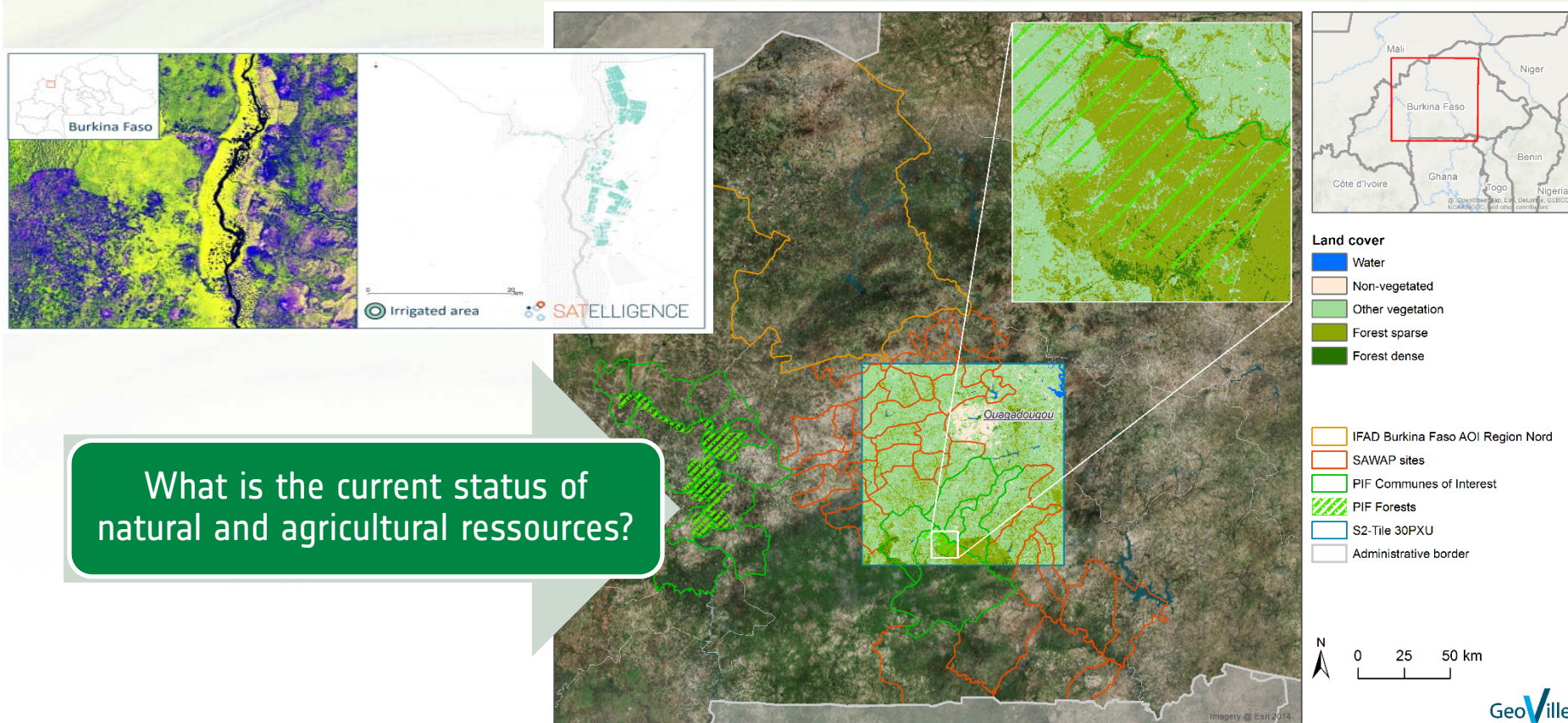
Areas of engagement in Burkina Faso



Effective management of natural resources



Land cover change mapping and ecosystem services



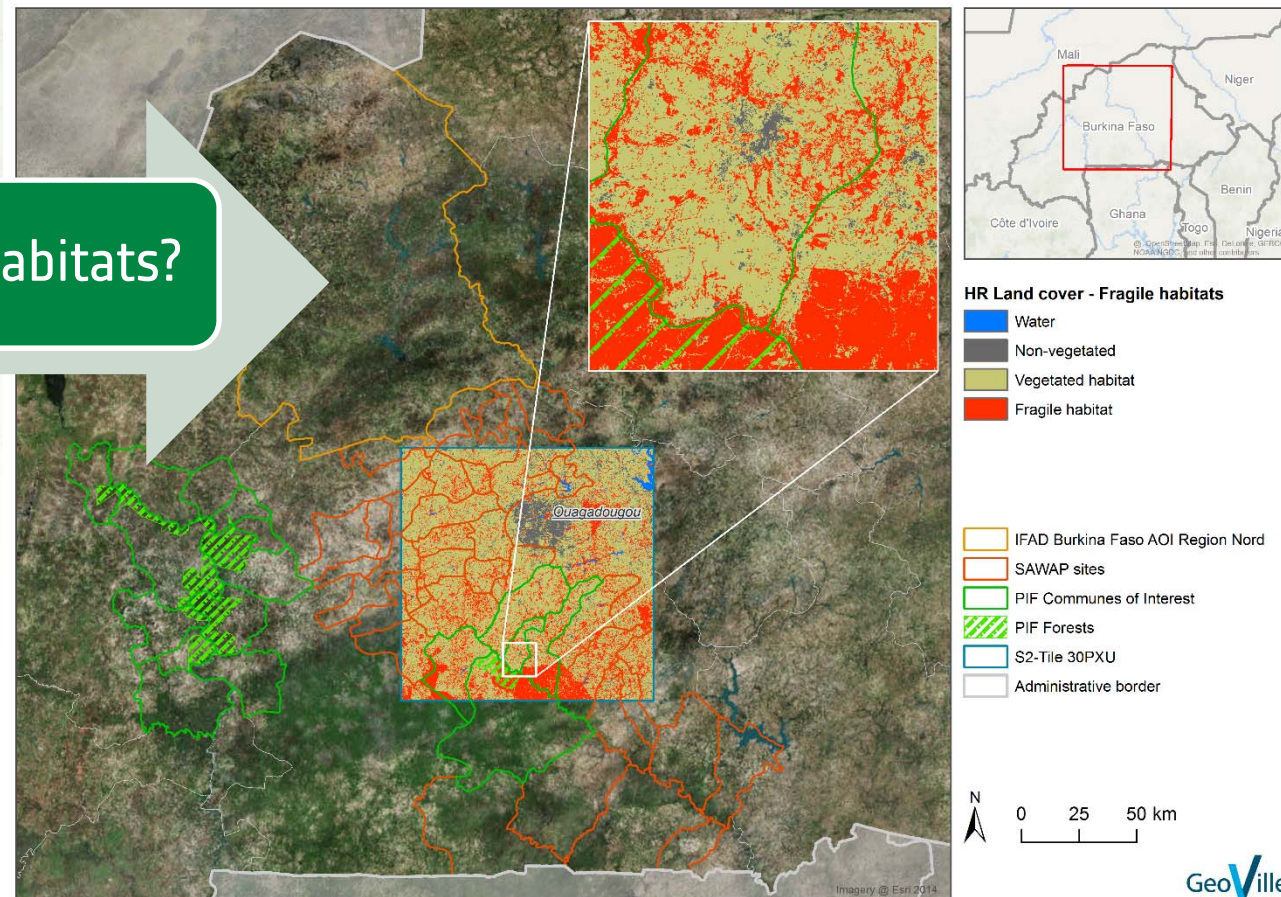
Effective management of natural resources



Land cover change mapping and ecosystem services

Where are fragile habitats?

Fragile habitats can be identified based on land cover – here, sparse and dense forest is highlighted in red.

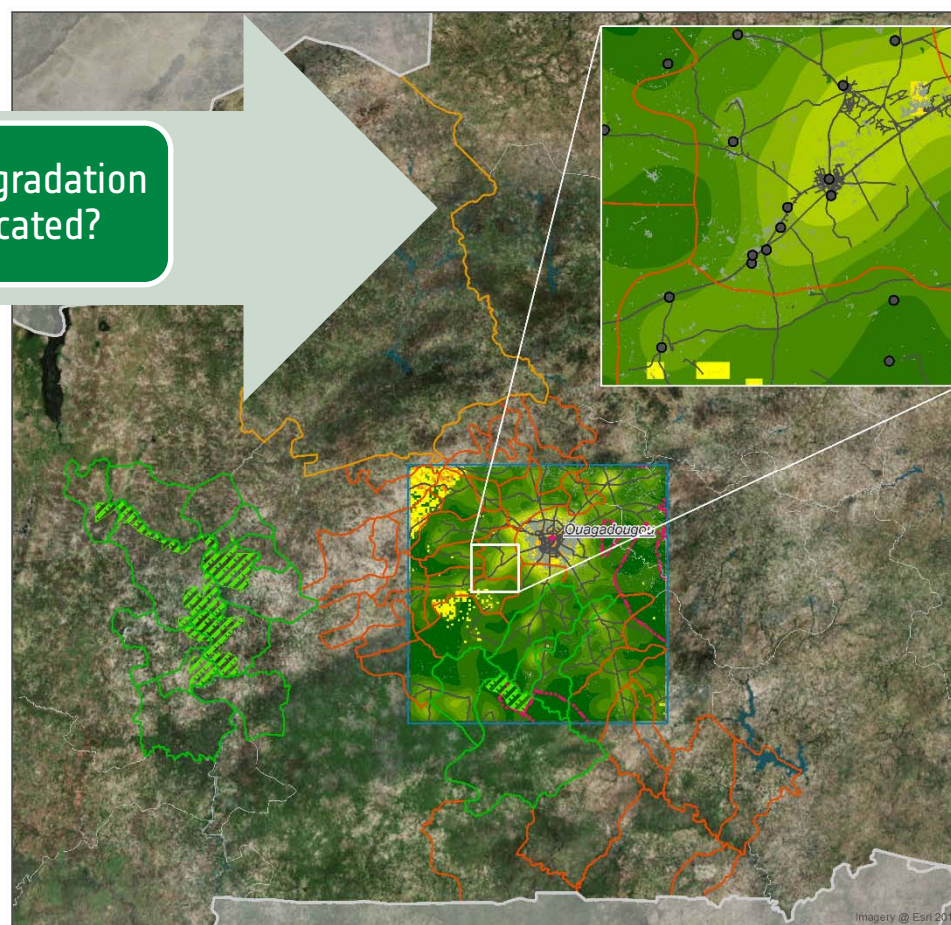


Land cover change mapping and ecosystem services

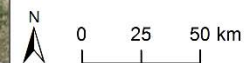
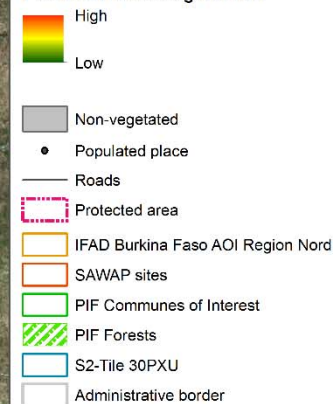
Where are most degradation prone habitats located?

The map shows the relative level of habitat degradation on the current landscape. It depicts spatial effects of threats on habitats and points out which areas are most affected.

Derived with InVEST, showing impact of anthropogenic disturbance and potential soil erosion.



Potential habitat degradation

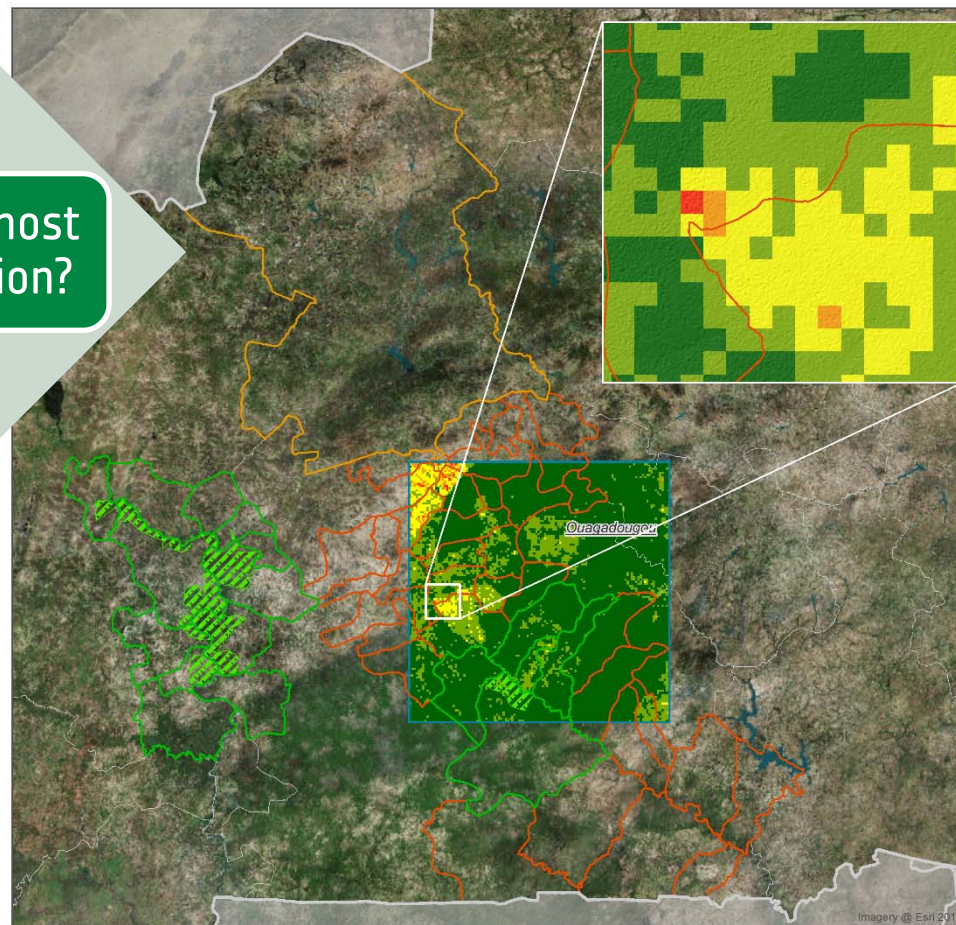


Assessing degradation



Tools to assess land degradation and environmental conditions

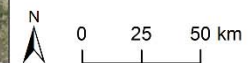
Which areas are most prone to soil erosion?



Potential Soil Erosion by Water

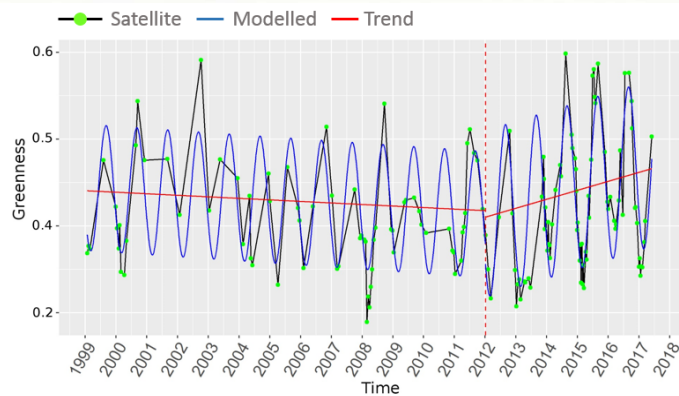
- very low
- low
- moderate
- high
- very high

- IFAD Burkina Faso AOI Region Nord
- SAWAP sites
- PIF Communes of Interest
- PIF Forests
- S2-Tile 30PXU
- Administrative border



Environmental and Social Safeguards (Monitoring and Evaluation)

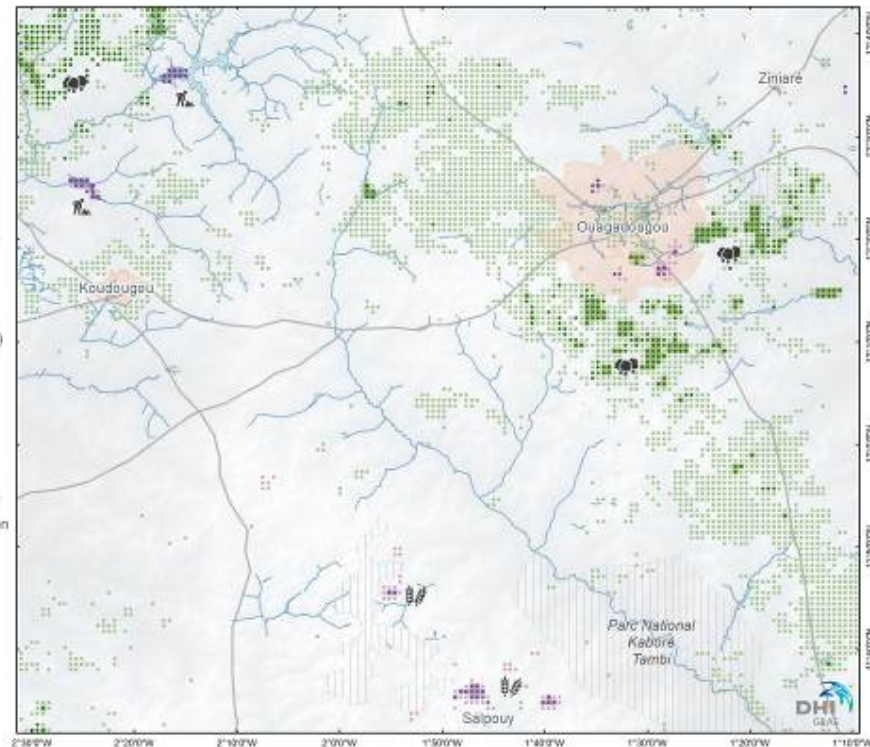
Have project investments led to a "regreening"?



Vegetation Change - Burkina Faso -



Vegetation Change (1999 - 2012)



Workshop 1

Jan / Feb 2018

Workshop 2

Jan / Feb 2019

1. Introduction to GIS and Remote Sensing

- ❑ Basic information on EO and GIS (e.g. image classification, image interpretation, hands on QGIS, etc.)
- ❑ State of the art software developments (e.g. WOIS, cloud computation, Sen2Agri)

2. EO4SD services

- ❑ Land cover/use change with focus on forestry
- ❑ Vegetation dynamics
- ❑ Land productivity
- ❑ Soil erosion

Focus on sustainable uptake of EO products and services within projects.

- ❑ Using EO4SD services
- ❑ Using information for monitoring and evaluation purposes
- ❑ Conceiving and calculating
- ❑ long term indicators and indicator maps

Thank you - Merci



<https://eo4sd.esa.int/agriculture>
<https://eo4sd.lizard.net/>

