

→ EARTH OBSERVATION FOR SUSTAINABLE DEVELOPMENT

Agriculture and Rural Development

Stakeholder Meeting EO4SD Agriculture Cluster
6 October 2017 | ESRIN, Frascati, Italy

Earth Observation in support of sustainable land management and food security projects in Ethiopia

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Background



The majority of Ethiopians are dependent on agriculture as a source of livelihood.

Land degradation, population growth, climate change and stagnant technology threaten livelihoods and food security.

EO4SD engages with 3 Projects in Ethiopia



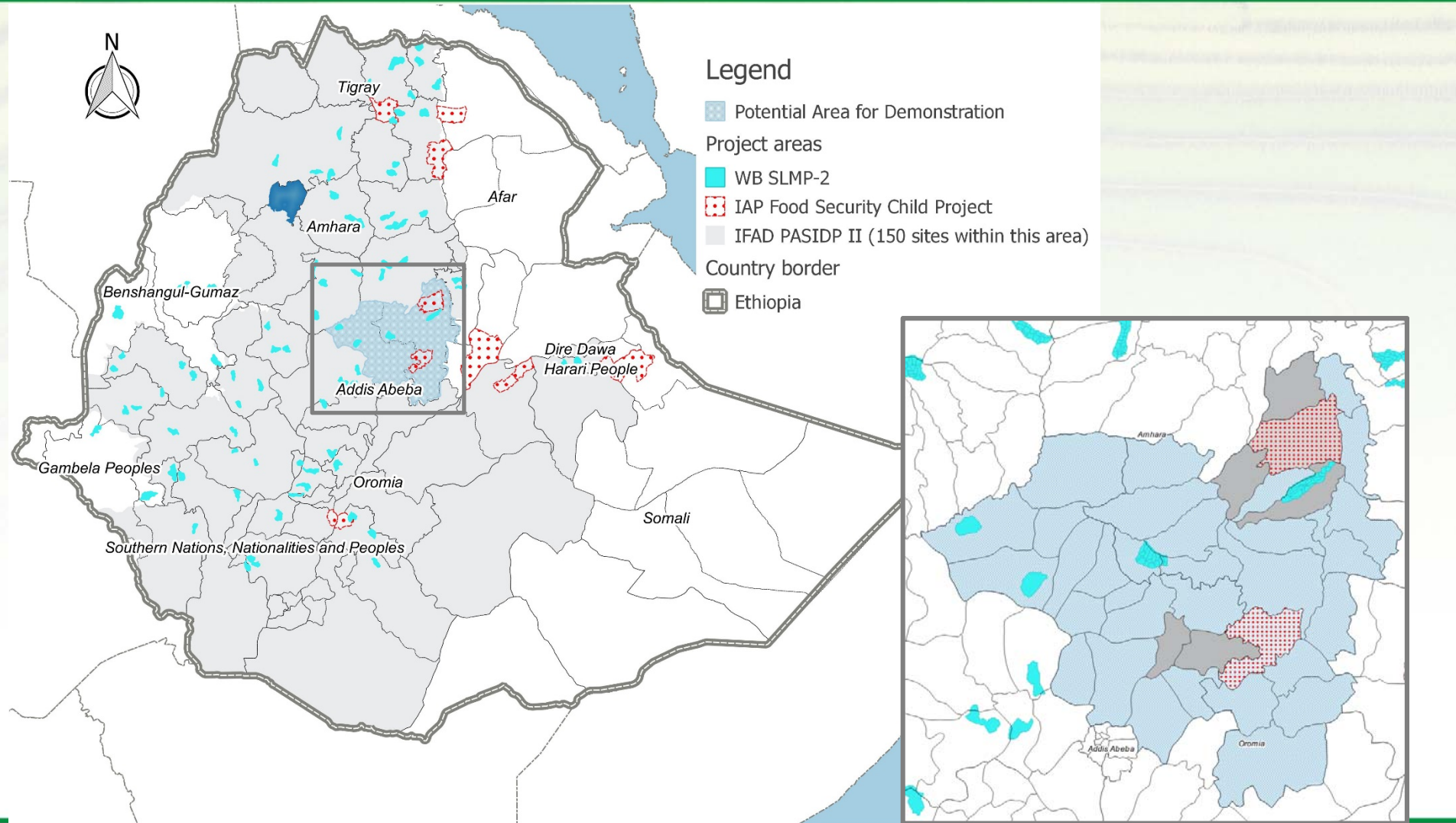
- WB **Sustainable land management project 2 (SLMP-2)**
- IFAD **Participatory Small-scale Irrigation Development Programme II (PASIDP II)**
- *GEF/IFAD IAP Food Security child project **Integrated Landscape Management to Enhance Food Security and Ecosystem Resilience in Ethiopia***

Overall goal: **improve food security**

- Halt land degradation (SLM practices)
- Mitigate climate risks
- Improve resilience of food production systems
- Enhance long-term sustainability



Areas of engagement

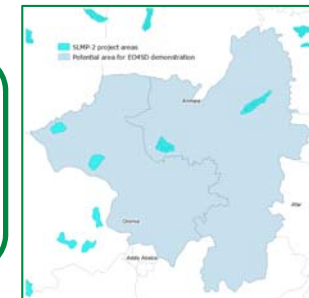


Provide **evidence-based M&E** indicators for land degradation rehabilitation interventions:

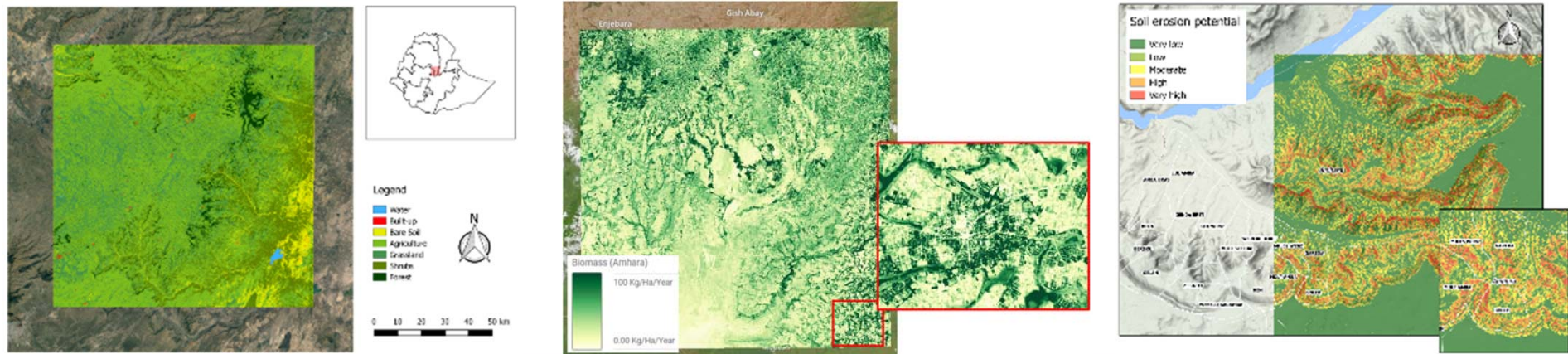
- Land cover and change
- Vegetation dynamics (trends)
- Biomass
- Soil Erosion

EO4SD Service

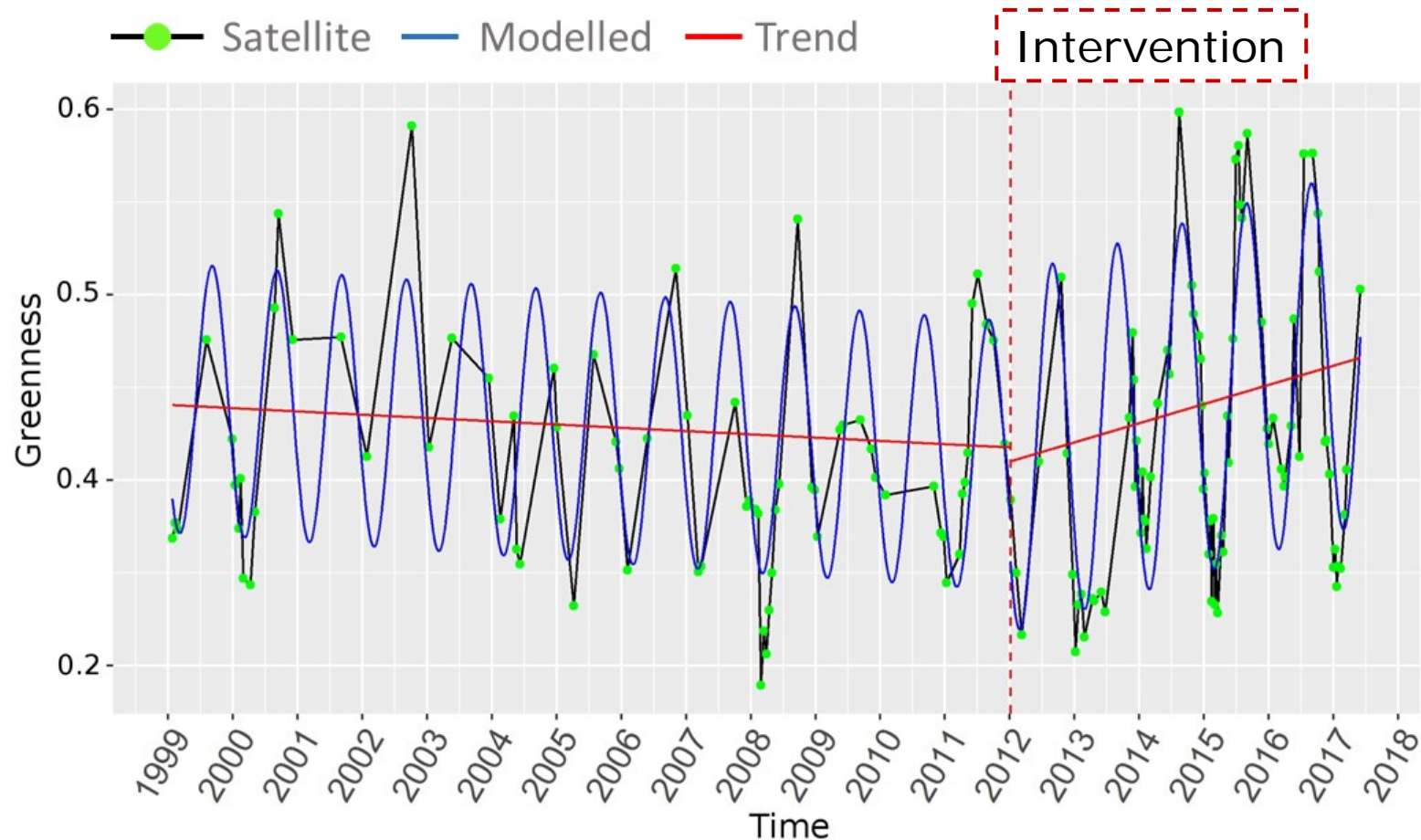
Tools to assess land degradation & environmental conditions



Local stakeholder: M. of Agriculture and Natural Resources



Does the intervention have an impact?

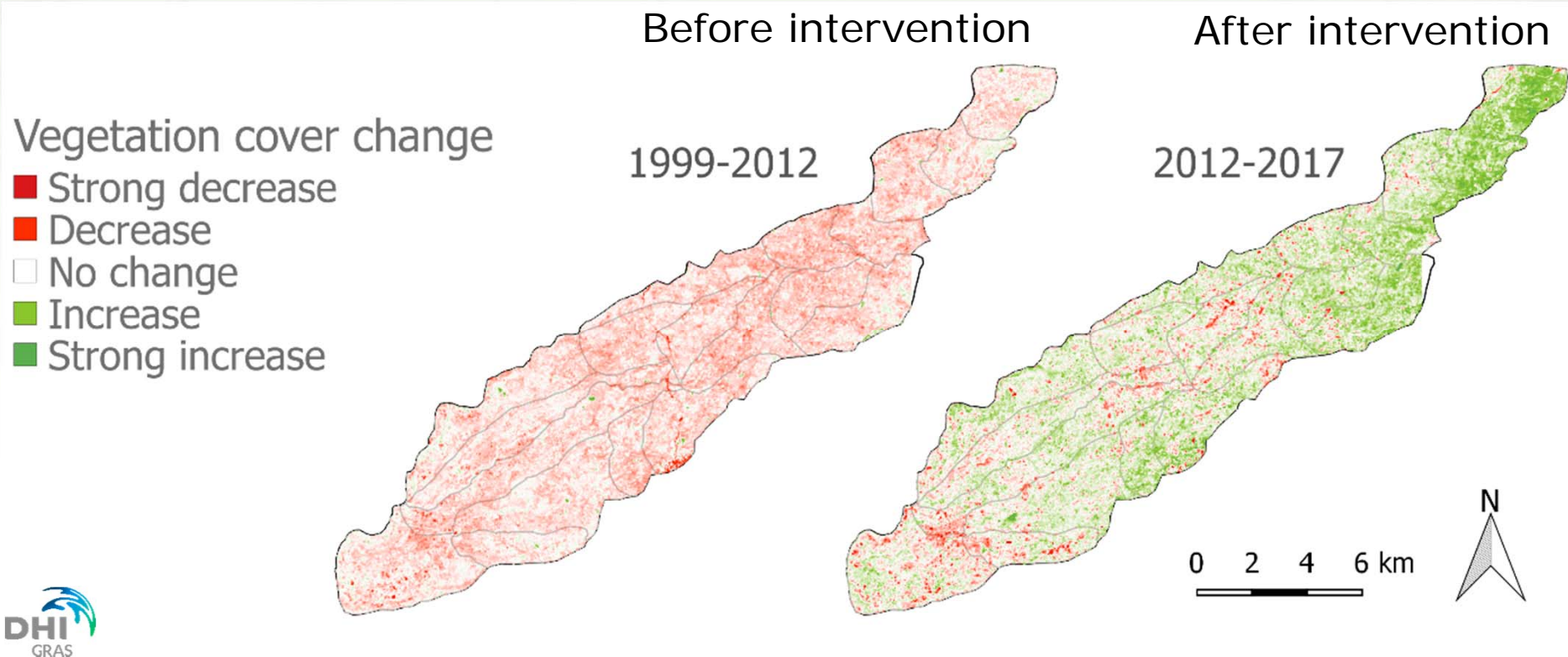


Long-term time series are required to reveal effective changes and trends, due to high inter-annual variability

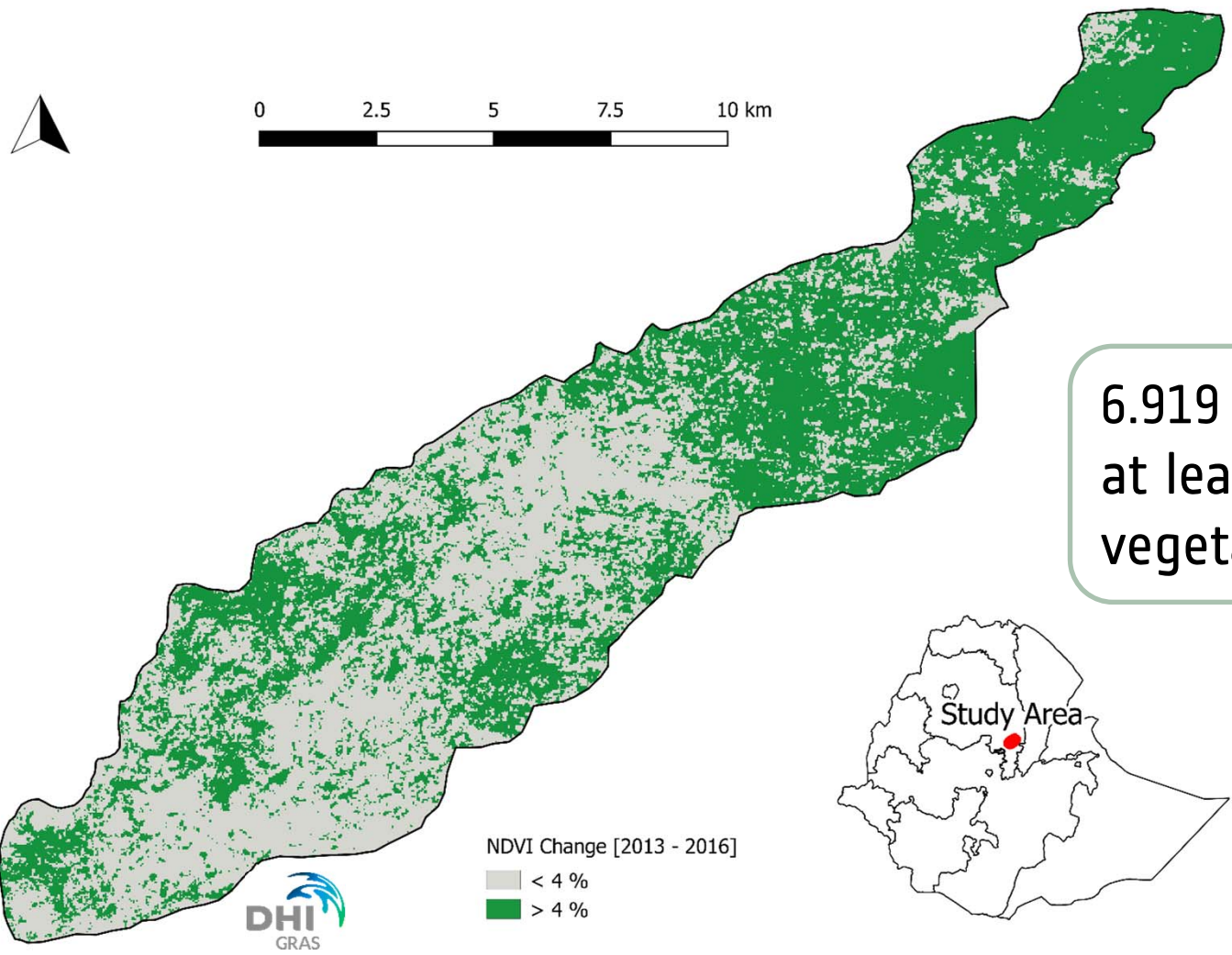
Does the intervention have an impact?



The SLMP-2 project started with rehabilitation measures of degraded land in the below watershed in 2012.

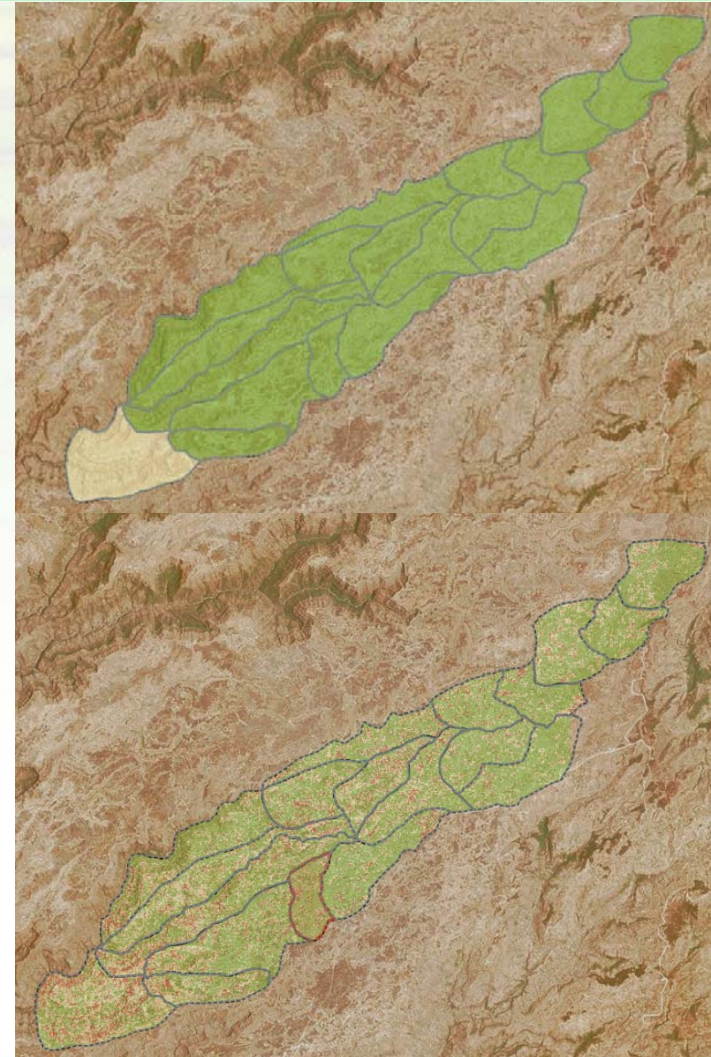
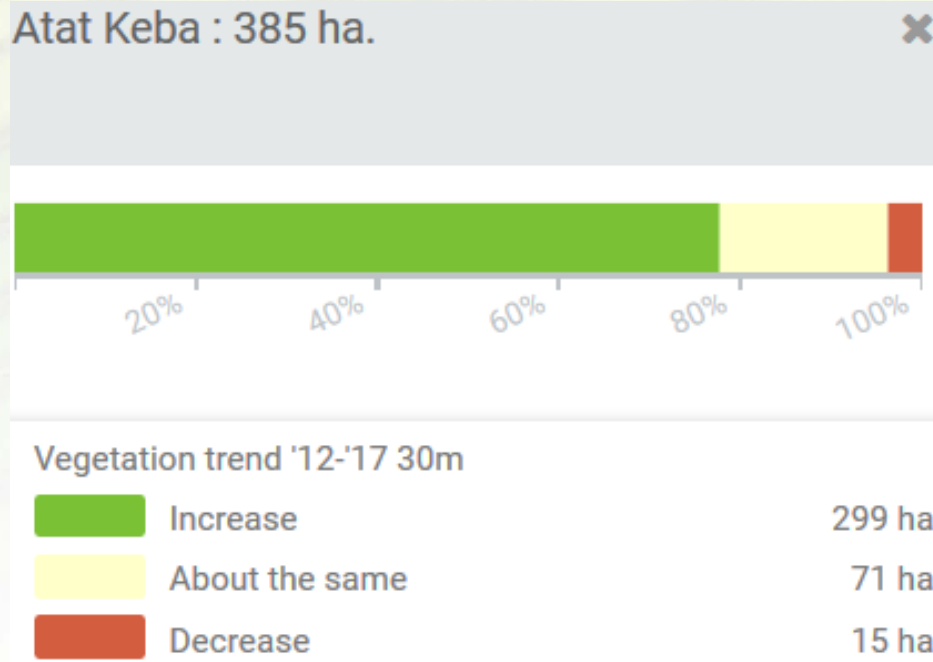


Quantify the impact



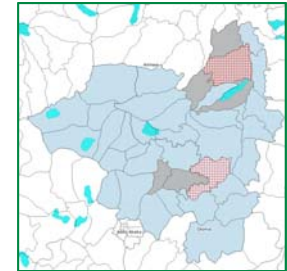
6.919 ha achieved at least 4% increased vegetation cover

Quantify the impact



EO4SD helps to answer these questions:

- Where should we invest in new small-scale irrigation schemes (first screening)?
- How are existing schemes performing (optimisation)?
- Is rehabilitation of watersheds successful?



- Irrigation suitability
- Roadless areas
- Irrigation performance and timing
- Vegetation dynamics

EO4SD Services

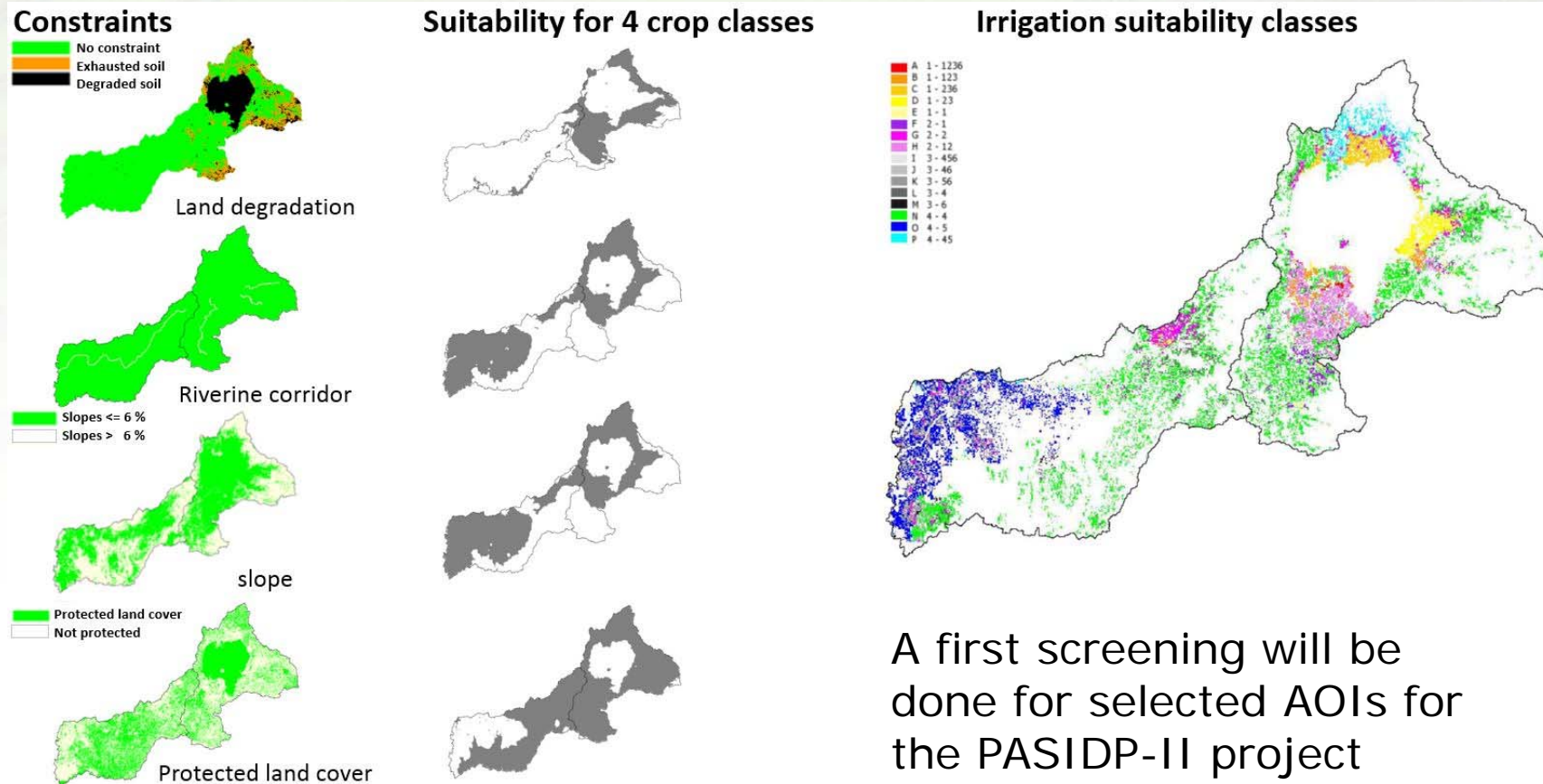
- Irrigation development & performance
- M&E Safeguards

Local stakeholder: M. of Agriculture and Natural Resources

Selecting the right sites for investments



Finding suitable areas for small scale irrigation schemes development. Example from Lake Tana Catchment

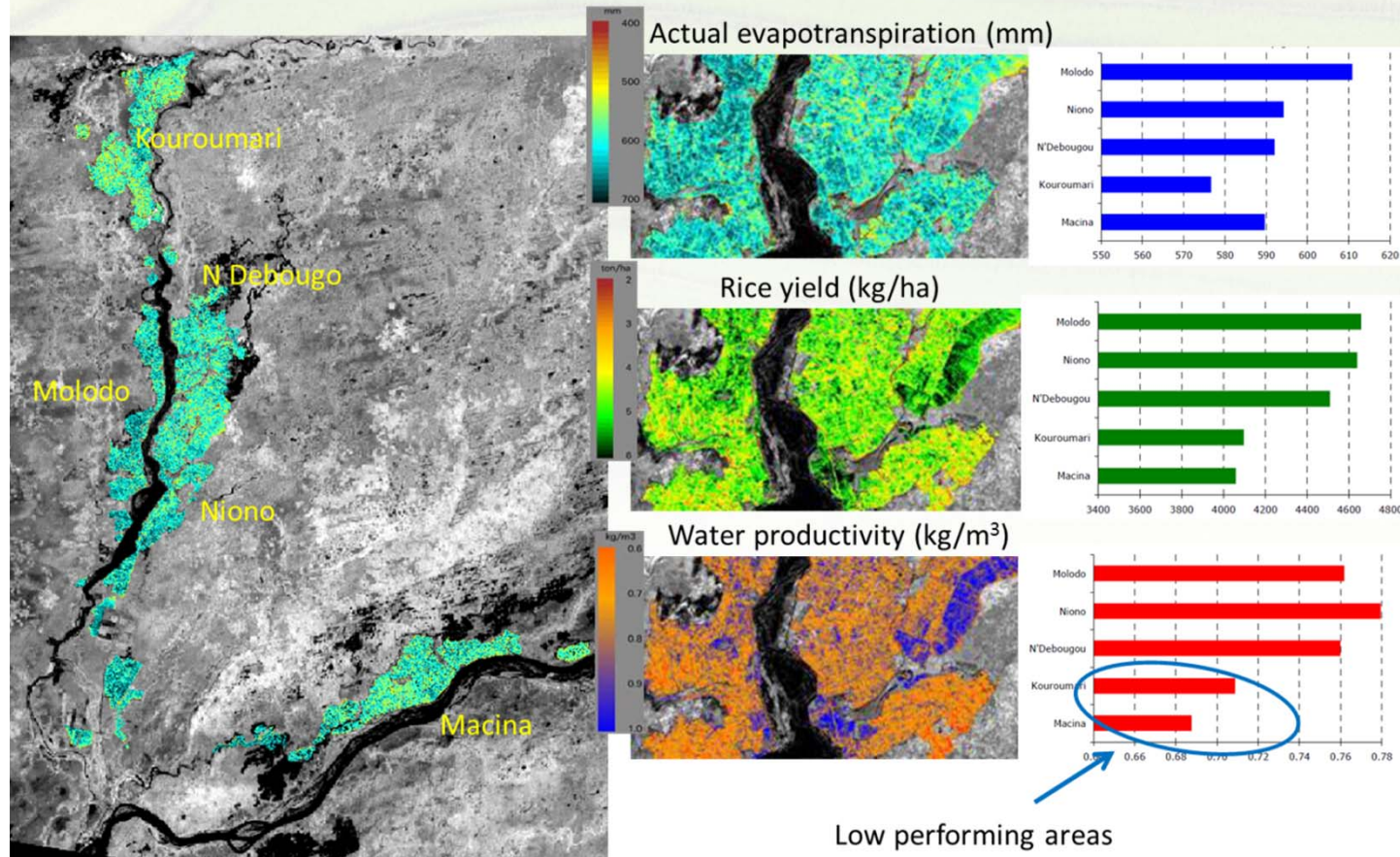


A first screening will be done for selected AOIs for the PASIDP-II project

Monitor irrigation management

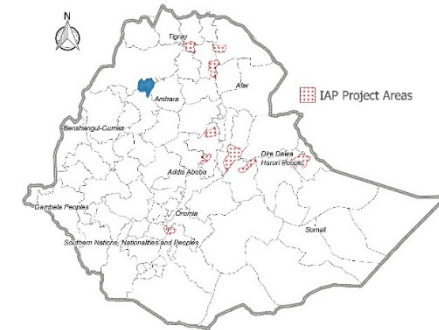


Monitor productivity and optimise use of water resources



A similar monitoring system will be set up for PASIDP-II in a scheme in North Shewa

EO4SD can provide objective information for setting the baseline at project start as well as status for mid-term and final assessments.



- Vegetation cover (ha)
- Biomass
- Land cover/change

EO4SD Service

Tools to assess
land degradation &
environmental conditions

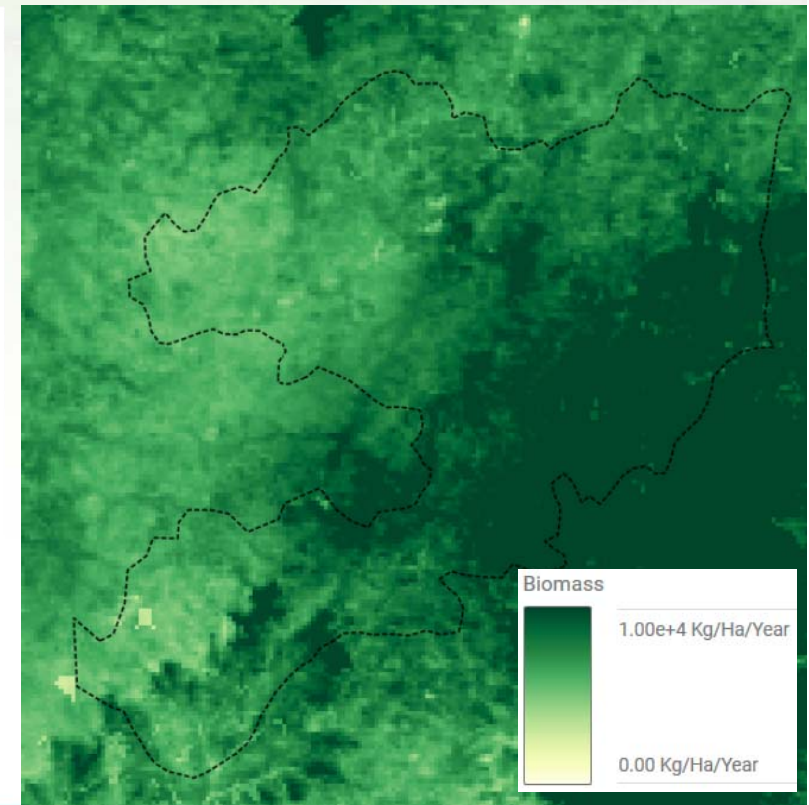
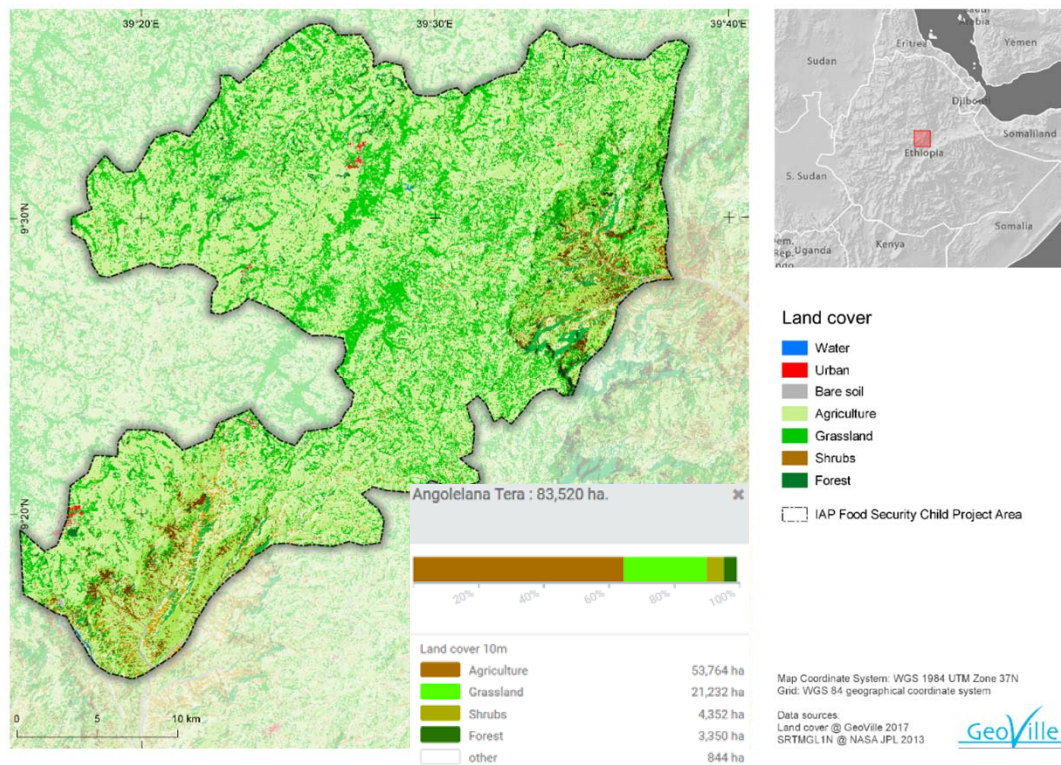
Implementing GEF agency: UNDP

Local stakeholders: Ministry of Environment, Forest and Climate Change (MEFCC)

Setting the baseline at project start



The IAP FS child project is in need of baseline information
Land cover and biomass map for Angolelana Tera, 2017



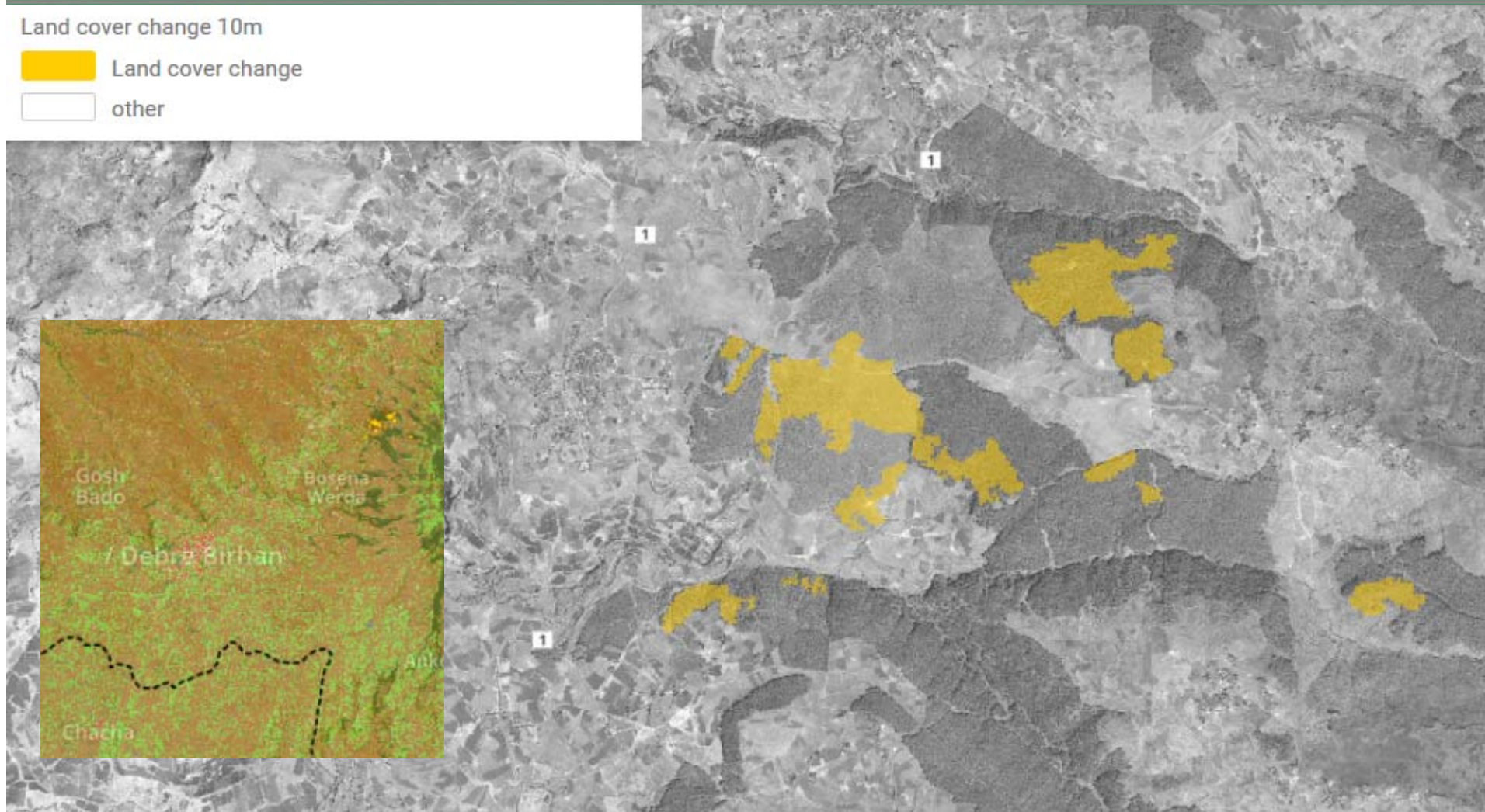
See where and what kind of change happens



Land cover change 10m

 Land cover change

 other



Collaboration and local capabilities



- May 2017: EO4SD introductory and requirements gathering visit
- July 2017: Consolidation meetings with SLMP and PASIDP and participation at the IAP-FS kick off meeting in Addis Ababa
- Regular exchange by phone and email
- Direct interaction with local partners since the first meetings



Capabilities:

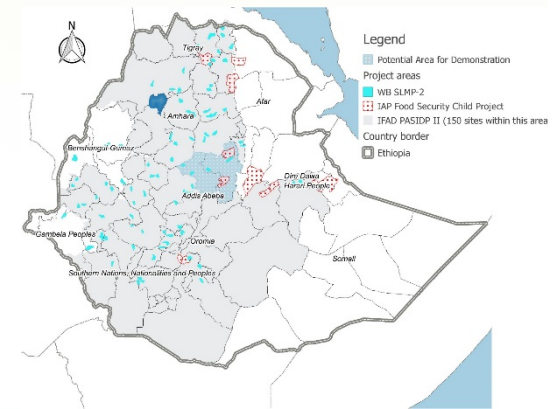
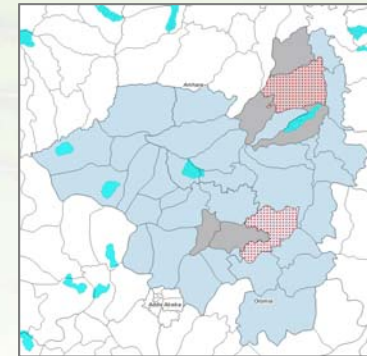
- Some experience with EO already exists
- Introduction of new Sentinel data is of major interest
- Cloud services offer new possibilities
- Major interest in CB to build up local capacity

Roll out



- Phase 2 roll out for entire North Shewa
- Evaluation of products with local information
- Service delivery coordinated with capacity building workshop incl. training on crop mapping with Sen2agri toolbox
- 2 Capacity building events (Beginning 2018 and 2019)

Roll out



Thank you



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

