



## Transparent monitoring in practice: Supporting post-Paris land use sector mitigation

Dr. Hannes Böttcher<sup>1</sup>, Anke Benndorf<sup>1</sup>, Cristina Urrutia<sup>1</sup>

<sup>1</sup> Oeko-Institut e.V., Borkumstr. 2, 13189 Berlin, Germany  
Contact: [h.boettcher@oeko.de](mailto:h.boettcher@oeko.de)

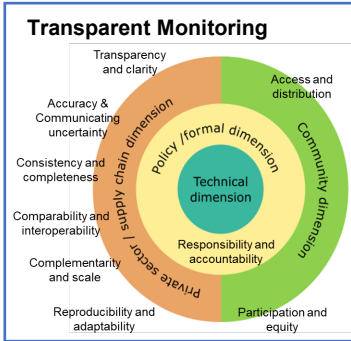
Supported by:  
Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection



based on a decision of the German Bundestag



**Oeko-Institut e.V.**



### Project findings

- There is **no data gap**, many existing data, often freely available
- There is an **interoperability and consistency gap**, e.g. from citizen science to satellite data) but can technically be overcome
- There are **capacity gaps** in some countries regarding use of global data, but also frontrunners who are happy to share experience
- There are **"mind gaps"** between different disciplines and sectors (experts in their bubbles), in all countries
- There is a **funding gap**, even if data is "freely available" there are costs for applying them

### Project facts

- Started in December 2020
- Duration of 4 years
- Funding by German IKI
- Project countries: Côte d'Ivoire, Ethiopia, Papua New Guinea, Peru
- Coordinator: CIFOR-ICRAF
- Implementing partners: FAO, IASA, Oeko-Institut, NWF, Wageningen University
- <https://www.transparentmonitoring.org/>



### Case studies



#### Emission factors conversion secondary forest to palm oil plantation in Peru

- Collection of field data, analysis of GHG emissions from soils in forests and oil palm plantations
- Development of national emission factors, allowing GHG estimation at tier 2 level
- Increase of accuracy of Peruvian GHG inventory



Málaga, N., Hergoualc'h, K., Kapp, G., Martius, C., 2021. Variation in vegetation and ecosystem carbon stock due to the conversion of disturbed forest to oil palm plantation in Peruvian Amazonia. *Ecosystems* 24, 351-369, DOI 10.1007/s10021-020-00521-8

Hergoualc'h, K., et al. Degraded forest conversion to oil palm plantation in the Peruvian Amazonia: Shift in soil greenhouse gas fluxes and ecosystem-scale CO<sub>2</sub> equivalent losses. *In preparation*

Replication data available in the dataverse of CIFOR under [www.data.cifor.org](http://www.data.cifor.org)



#### Pilot near real time monitoring with communities to complement satellite data in Peru

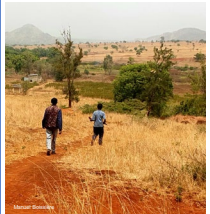
- Analysis with Peruvian partners to identify challenges in existing Community Based Monitoring (CBM) programs
- Development of an interactive digital data collection system to improve the data quality and reduce time lags for near real time forest monitoring
- Increase of local capacities



Cappello, C. et al., 2022: Alert-Driven Community-Based Forest Monitoring: A Case of the Peruvian Amazon. *Remote Sens.*, 14, 4284, DOI 10.3390/rs14174284



Watch the storymap



#### Assessing land-use following deforestation: remote sensing & deep learning

- Identification of land use/drivers of deforestation at national scale in Ethiopia with local stakeholders
- Development of a deep learning model design for tracking drivers of land-use change
- Implemented the methodology for assessing drivers of forest change for Ethiopia in SEPAL and GitHub



Masolele, R. et al., 2022: Using high-resolution imagery and deep learning to classify land-use following deforestation: a case study in Ethiopia. *GIScience & Remote Sensing*, Vol.59,no.1, pp.1446 -1472, DOI 10.1080/15481603.2022.2115619



Look at the map



#### Increasing transparency in cocoa mapping in Côte d'Ivoire

- Collection and comparison of different map datasets from various actors: academic, private, and national
- Maps made accessible and comparable
- Linked with civil society in workshops
- EU Regulation on Deforestation Free Products evidenced the need to produce a state-owned cocoa map



Look at the geo-wiki