

DATA GOVERNANCE IN AFRICA



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Circular Economy, Malabo, Equatorial
Guinea

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Assessing the Enabling Effect of ICTs for Climate Action and Biodiversity

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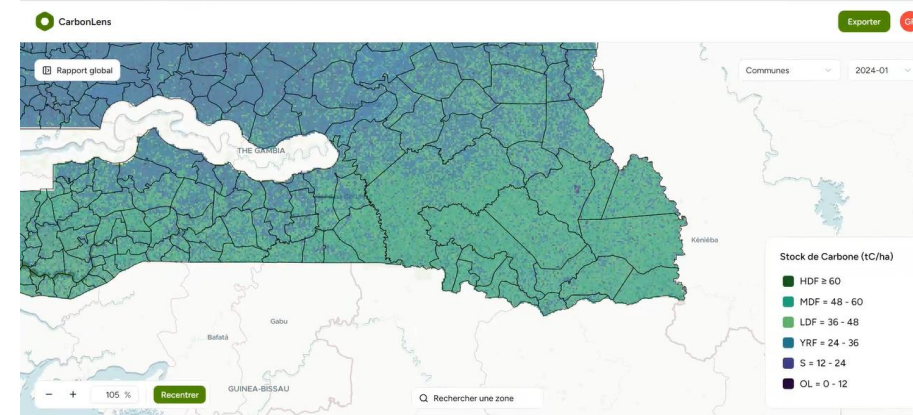
Case study: Carbon Lens project in Senegal

The Carbon Lens Project provides a **cost-effective tool** for countries to **monitor forest carbon stocks**, support the achievement of **climate targets (NDCs)**, and sustainable **forest and climate management**.

Role of Data:

- Combine **satellite imagery, AI and local engagement** to automatize costly and timely manual data collection,
- increase accuracy and effectiveness of forest carbon stock monitoring and
- facilitate **scalability** across geographies and regions.

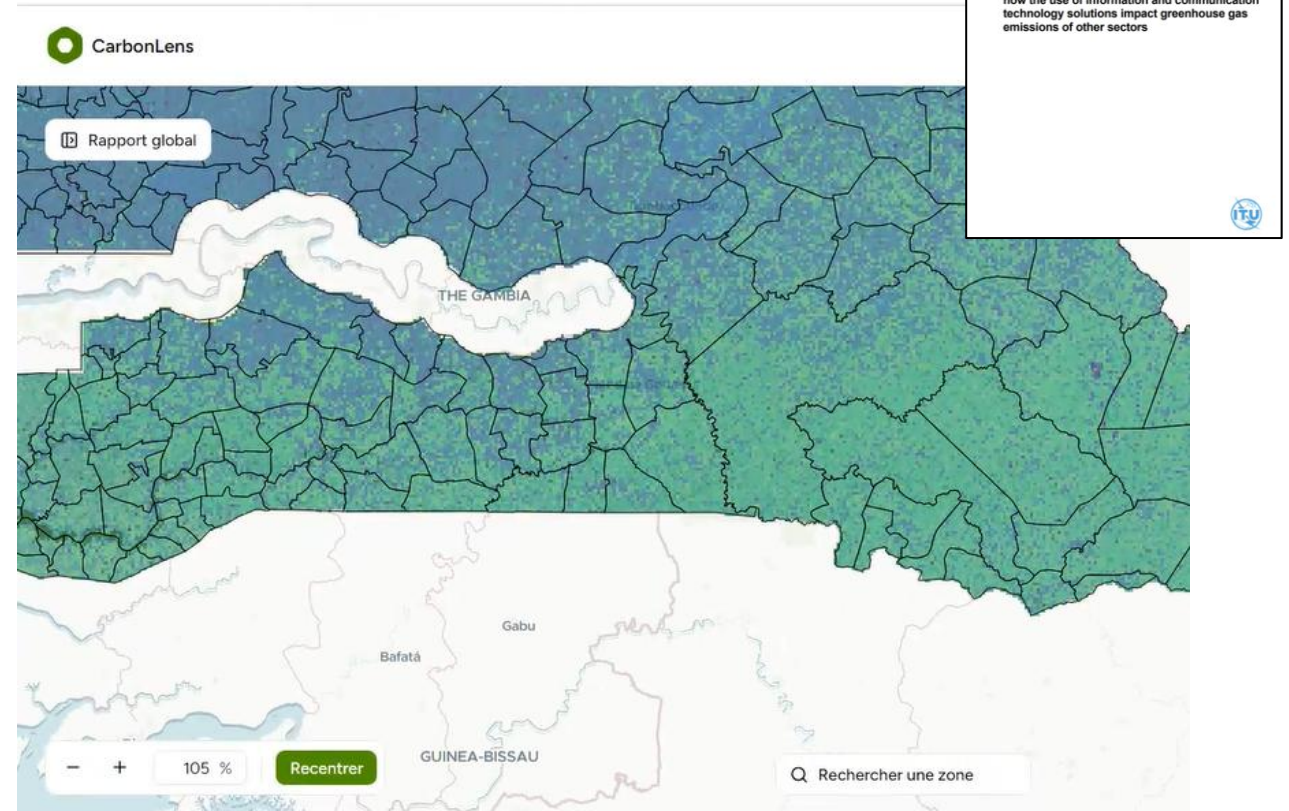
Partners: data 354, Senegalese Climate Ministry (METE, DEFCCS), funded by BMZ and European Commission under Data Governance in Africa Team Europe Action



Read the full story:



Comparing the effects of the baseline and the ICT (action) scenario: which one emits less CO2?



Impact assessment applying ITU-T L.1480:

- assessment depth tier 3,
- assessment perspective ex-ante

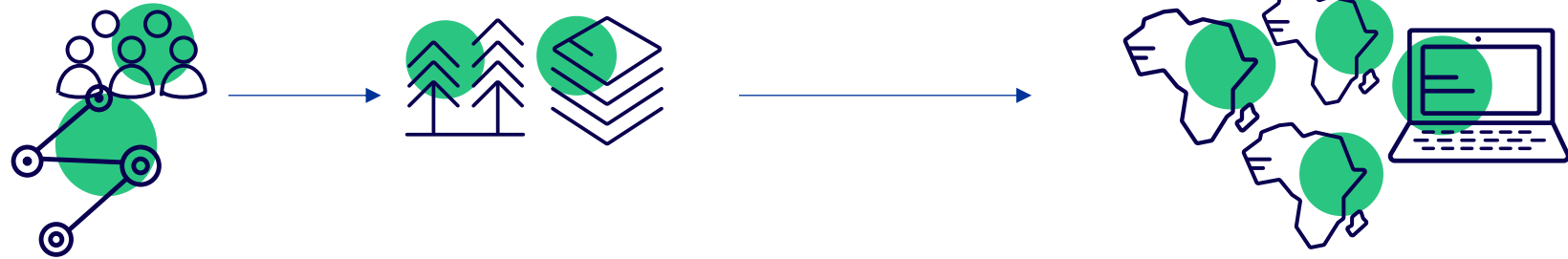
Impact assessment applying ITU-T L.1480 to Carbon Lens

Defining the **baseline scenario** (without Data and AI)

national forest inventory
of 520 permanent plots
every 5 years (vehicles,
equipment)

Field data
collected

traditional field-based
national forest
inventory of 42
hectares every 5 years



- manual biomass data collections for DEFCCS inventories, including carbon emissions from travel (in-country)



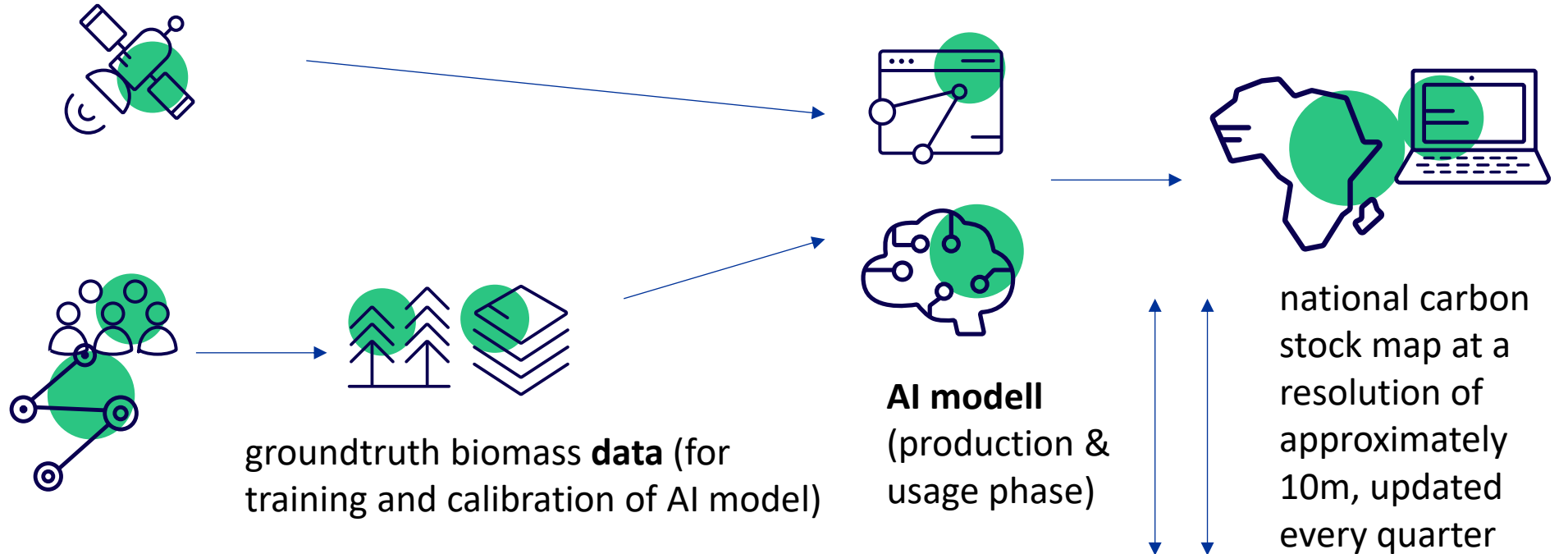
Impact assessment applying ITU-T L.1480 to Carbon Lens

Defining the **ICT scenario** (with Data and AI component)

Sentinelle 1, 2,
optical/radar **data**
combined with
Lidar « GEDI » data

+

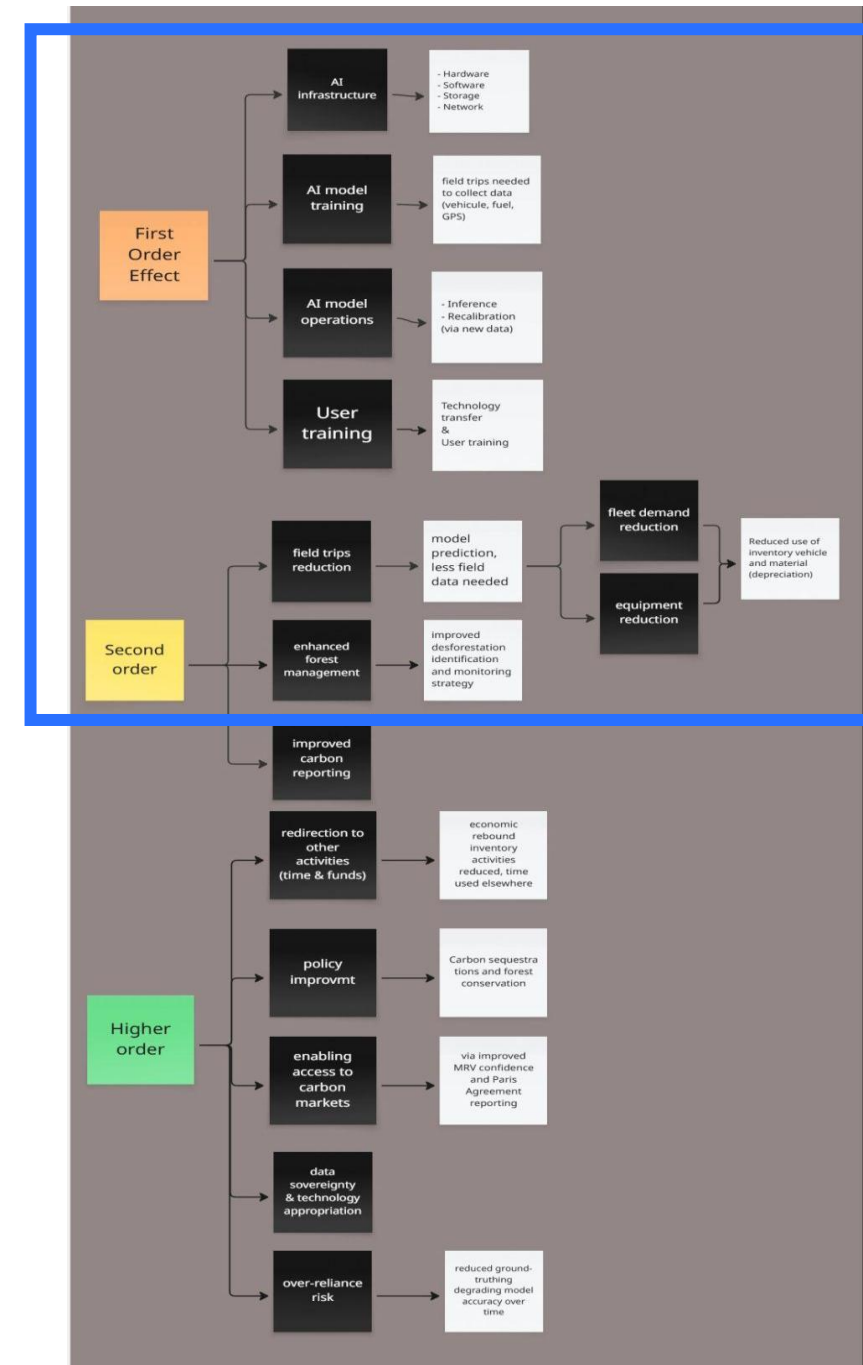
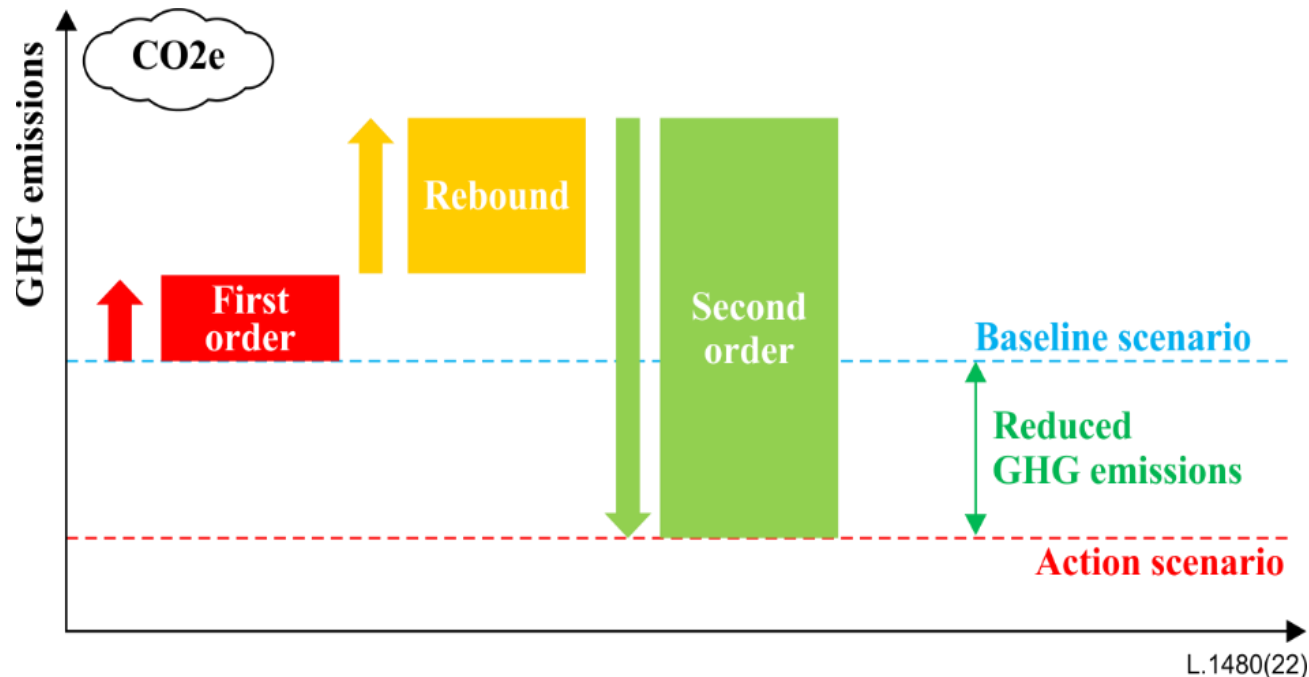
combined with
field data



- **Reducing environmental footprint:** potentially less field trips
- **Enhanced climate impact:** more accurate, continuous and comprehensive carbon stock map → enhanced forest management and avoided deforestation, improved carbon reporting, potentially carbon market access

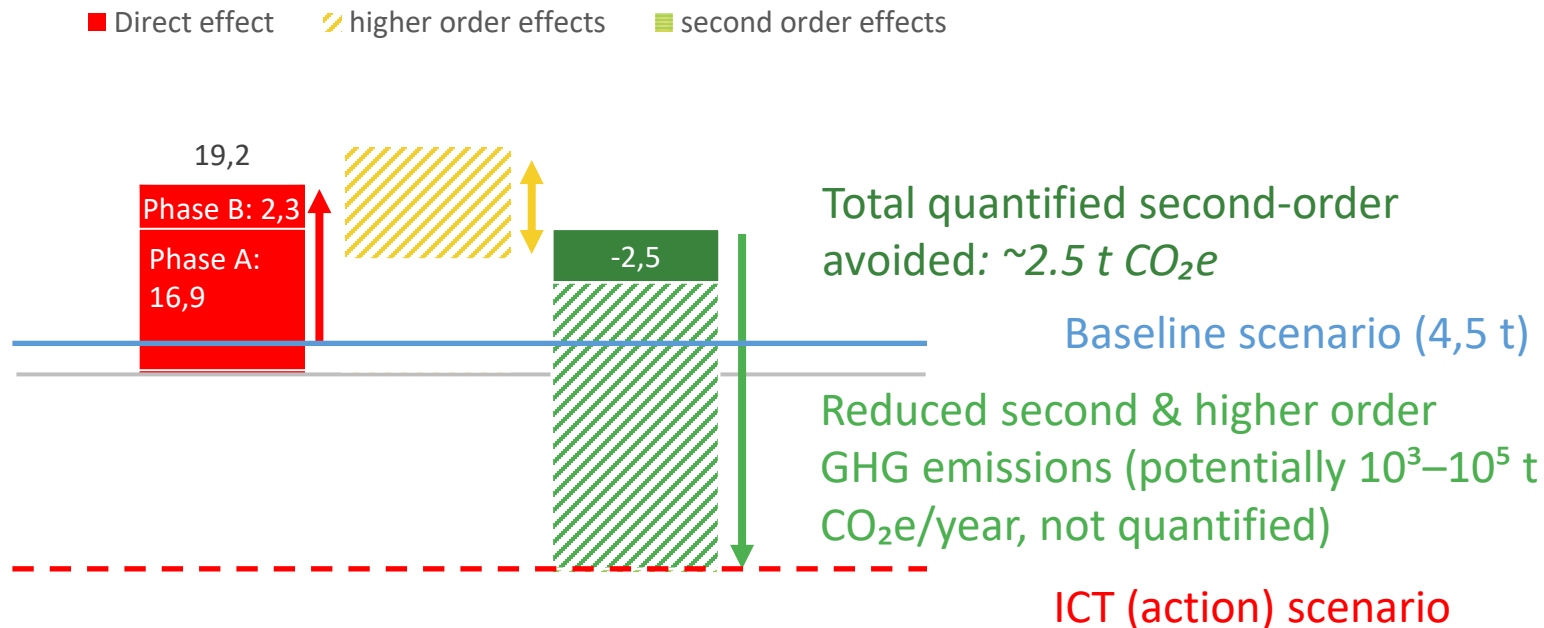
The consequence tree for Carbon Lens describes first order, second order and higher order effects

The tier-3 assessment could already quantify first order and some second order effects, other effects were identified – these assumptions will help to compare the effects of the baseline scenario and the ICT (action) scenario



Comparing first order effects of one-time development (Phase A) and a recurring operational (Phase B)

GHG EMISSIONS IN T CO₂E



First order effect: AI-specific life cycle stages of ITU-T L.1801, including production (phase A) and use (phase B)

Net-second order effect for Phase B (Usage): CarbonLens operations emit 49%-93% less than the reference scenario

Overall net-carbon effect (phase A + B): second and higher order effects need to be quantified in a tier-2 assessment during implementation phase

Usage phase: The ICT solution is less carbon-intensive to *operate* than the system it replaces.

