Food and Agriculture Organization of the United Nations

Guidance on Baseline Development for Agriculture, Forestry and Land Use

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Compendium on GHG Baselines and Monitoring

Outline

- Main components of AFOLU baseline guidance
- AFOLU mitigation actions covered
- Guidance on technical methodology
- Guidance on data sources
- Process guidance for baseline development

Main components of AFOLU baseline guidance

- Guidance on technical methodology:
  - Projections of the agricultural sector (activity data)
  - GHG emission calculation methodologies
- Guidance on data sources:
  - Data on projections of the agricultural sector to 2030/2050
  - GHG emission and carbon stock change factors
- Process guidance for baseline development:
  - Step-by-step guidance on actual baseline development & selected guidance on MRV

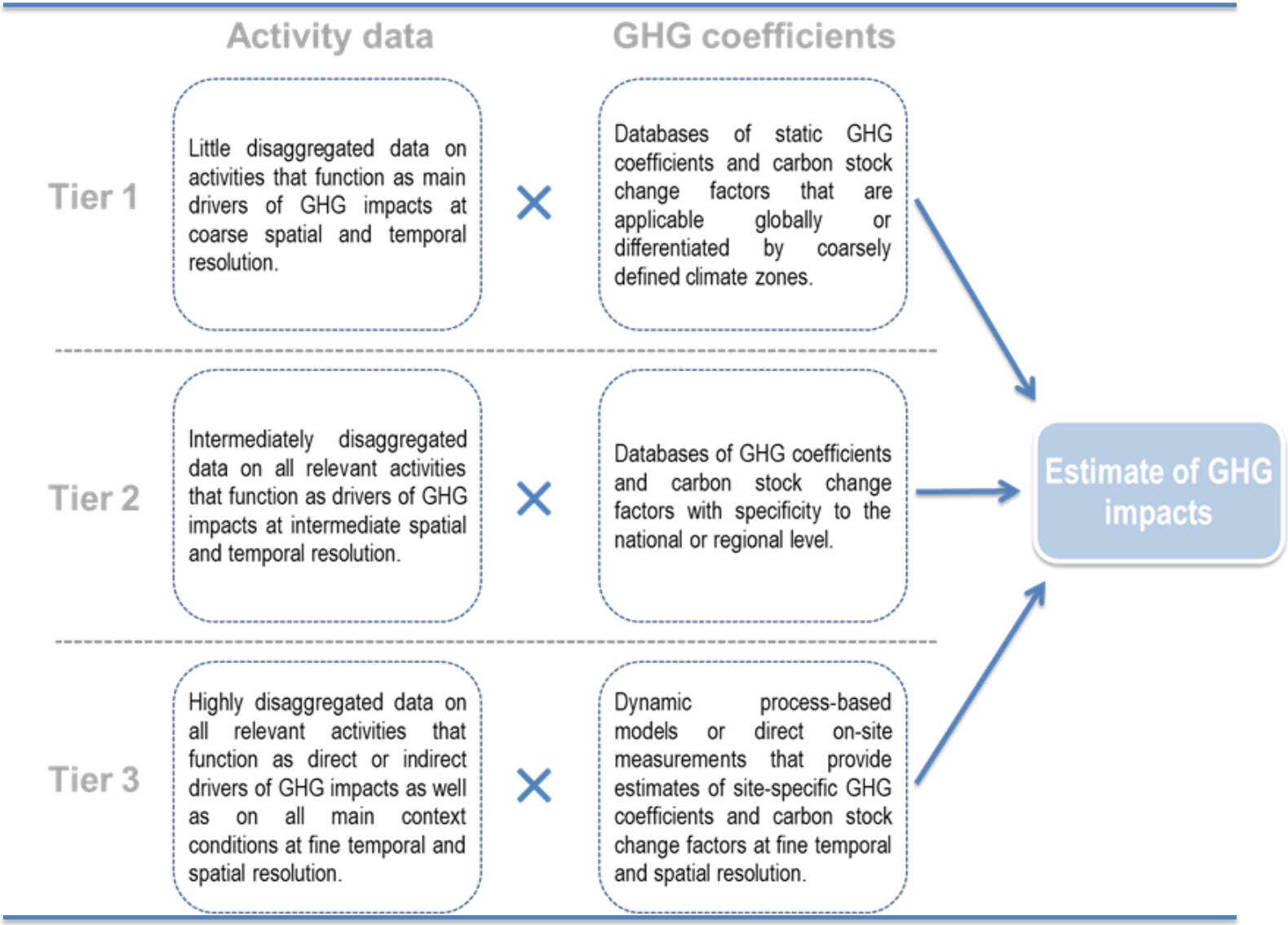
AFOLU mitigation actions covered

- Guidance for specific GHG mitigation actions will be structured following the impact categorization in IPCC (2006)

Biomass stocks and dead organic matter stocks on all managed or converted lands
Soil carbon stocks on all managed or converted lands
Non-CO_2 GHG emissions from biomass burning on all managed or converted lands
CH_4 emissions from rice cultivation
CH_4 and N_2O emissions on managed organic soils and wet soils
CH_4 emissions from enteric fermentation
CH_4 and N_2O emissions from manure management
N_2O emissions from managed soils
CO_2 emissions from liming and urea fertilization

Guidance on technical methodology

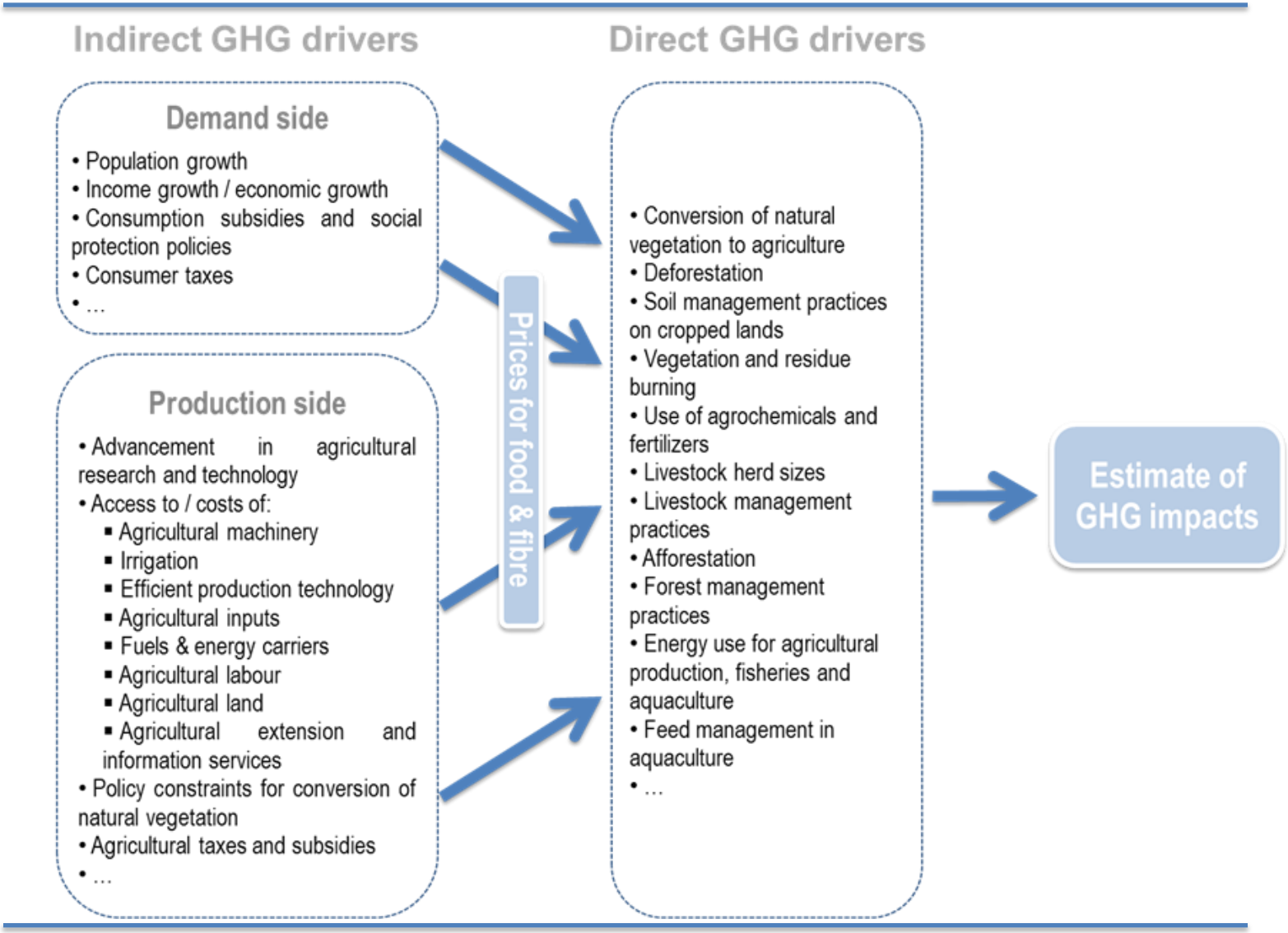
- Tiered approach to data and methodology selection:
  - Low tier approaches allow for less data and expertise intensive practical baseline development
  - References to high tier approaches are likewise provided
- Agricultural sector projections
  - Challenge: Most methodologies are strongly expertise requiring or draw strongly on assumptions
- GHG emission calculation methodologies
  - Main reference point remain Tier1 and Tier2 like methodologies as defined in IPCC (2006)


Activity data
GHG coefficients
Tier 1
Little disaggregated data on activities that function as main drivers of GHG impacts at coarse spatial and temporal resolution.
Databases of static GHG coefficients and carbon stock change factors that are applicable globally or differentiated by coarsely defined climate zones.
Tier 2
Intermediately disaggregated data on all relevant activities that function as drivers of GHG impacts at intermediate spatial and temporal resolution.
Databases of GHG coefficients and carbon stock change factors with specificity to the national or regional level.
Tier 3
Highly disaggregated data on all relevant activities that function as direct or indirect drivers of GHG impacts as well as on all main context conditions at fine temporal and spatial resolution.
Dynamic process-based models or direct on-site measurements that provide estimates of site-specific GHG coefficients and carbon stock change factors at fine temporal and spatial resolution.
Estimate of GHG impacts

Guidance on data sources

- Data sources on direct and indirect activity data projections in the AFOLU sector

- Data sources on GHG emission and carbon stock change factors:
  - IPCC (2006) and Tier 2 databases


Indirect GHG drivers
Direct GHG drivers
Demand side
• Population growth
• Income growth / economic growth
• Consumption subsidies and social protection policies
• Consumer taxes
• …
Production side
• Advancement in agricultural research and technology
• Access to / costs of:
▪ Agricultural machinery
▪ Irrigation
▪ Efficient production technology
▪ Agricultural inputs
▪ Fuels & energy carriers
▪ Agricultural labour
▪ Agricultural land
▪ Agricultural extension and information services
• Policy constraints for conversion of natural vegetation
• Agricultural taxes and subsidies
• …
Prices for food & fibre
• Conversion of natural vegetation to agriculture
• Deforestation
• Soil management practices on cropped lands
• Vegetation and residue burning
• Use of agrochemicals and fertilizers
• Livestock herd sizes
• Livestock management practices
• Afforestation
• Forest management practices
• Energy use for agricultural production, fisheries and aquaculture
• Feed management in aquaculture
• …
Estimate of GHG impacts

Process guidance for baseline development

- Defining a transparent step-by-step approach to baseline development
- Providing clear applicability conditions
- Contributing to comparability and clear documentation standards
- Guiding quality control and sensitivity analysis

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Thank for your attention

Contact us

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