Issues to define temporal, spatial and activity boundaries for accounting for land-based mitigation actions, including for REDD+, NAMAs and projects-

Joint FAO-IPCC-IFAD expert meeting:

Emerging activities to combat climate change – use of FAO datasets and IPCC Guidelines for AFOLU

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Outline

- Emerging framework of mitigation actions: will likely set a common framework for reporting and accounting different mitigation actions implemented at different time and spatial scale and across GHGI categories
- Emerging need: to ensure comparability of quantified mitigation, across actions implemented at different scales

✓ Mitigation through the AFOLU sector (and unique aspects of mitigation with C pools)

✓ AFOLU sector linkages with other sectors

✓ Elements to be considered in setting boundaries for accounting for AFOLU mitigation actions

✓ Dealing with limits

✓ VCS AFOLU Requirements & Activities

- ✓ Time limits
- ✓ Spatial Limits
- ✓ Activity Limits

✓ Conclusions

Mitigation through the AFOLU sector

Mitigation through the AFOLU sector can be achieved by:

- Reducing/Avoiding GHG emissions into the atmosphere
- Long term CO_2 sequestration (removals as part of a cyclic pattern of management with emissions and removals is not mitigation)
- Replacing more carbon-intense materials/fuels

The AFOLU sector includes 2 different types of sources/sinks

- Those associated with C pools (e.g. vegetation biomass, SOM, etc)
- Those not-associated with C pools (e.g. synthetic fertilizers)

Mitigation through C pools

- Reducing/Avoiding net C stock losses
- Enhancing C stocks

Unique aspects of mitigation with C pools

When accounting for mitigation through C pools: time, space and causes of C stock changes do matter:

- C pool capacity is limited and C stocks accumulate across time following a sigmoid curve, so current C stock change is also function of past changes (legacy) [Time]

- Across a [sustainable] management cycle, C stock gains and losses tend to average out around a mean C stock level (no long term sequestration/emission) [Time]

- Changes in management/use of land determine a change in the mean C stock level (long term sequestration/emission) [Causes]

- Factors not under human control impact C stocks [Causes]

- Increases/decreases in C stocks in a land can be offset by equivalent decreases/increases in C stocks in another land [Space]

Further, C stocks may impact the accounting of mitigation across sectors of the GHGI other than AFOLU, consequently when accounting for mitigation the AFOLU sector cannot be delinked from other sectors

AFOLU sector linkages with other sectors

Bioenergy:

C stock changes in AFOLU sector + CH_4 and N_2O emissions in Energy sector

avoided CO_2 emissions in Energy sector

Materials

e.g. HWP:

C stock changes in AFOLU sector + CH_4 and N_2O emissions in Waste/Energy sector

avoided GHG emissions in Energy and IPPU sectors

e.g. manure:

C stock changes and net CH_4 and N_2O emissions in the AFOLU sector

avoided GHG emissions in Energy and IPPU sectors

e.g. biogenic waste:

C stock changes and net CH_4 and N_2O emissions in the AFOLU sector

avoided GHG emissions in Waste sector

Fossil fuels (peat):

GHG emissions (production) in AFOLU sector + GHG emissions (consumption) in Energy sector

Elements to be considered in setting boundaries for accounting for AFOLU mitigation actions

Time limits (issues on permanence):

- national system (long term) *vs* project activities (temporary)
- annual/periodic accounting (incomplete) *vs* management-cycle assessment (complete)

Spatial limits (issues on leakage):

- Entire land area (national complete) *vs* project activities (sub-national incomplete)

Limits on causes/sources of GHG fluxes (issues on leakage/double counting/origin):

- Full C stocks (mixed) *vs* anthropogenic (singled out)
- Full C stocks in an economy wide GHGI (complete) *vs* activity/sector (incomplete/ double counted)
- C pools/GHG (Tier 1) vs Full (Tier 3)
- Corporate/product (private liability) vs sector/national (common liability)

Dealing with limits

Time limits:

- Sub-national project activities to be included within a national framework (e.g. JI, VCS Standard for JNR) or the accounted mitigation discontinued at their end (e.g. CDM)
- Historical data may need to be projected to deal with legacy effect in C stock changes (e.g. FMRL/ FRL)
- Comparison between average C stocks of management cycles/land uses is an unbiased way for accounting for mitigation (e.g. IPCC guidance for estimating SOC stock changes associated with land use/management changes; GFOI guidance for accounting for mitigation of REDD+; VCS Standard for ARR IFM)

Spatial limits:

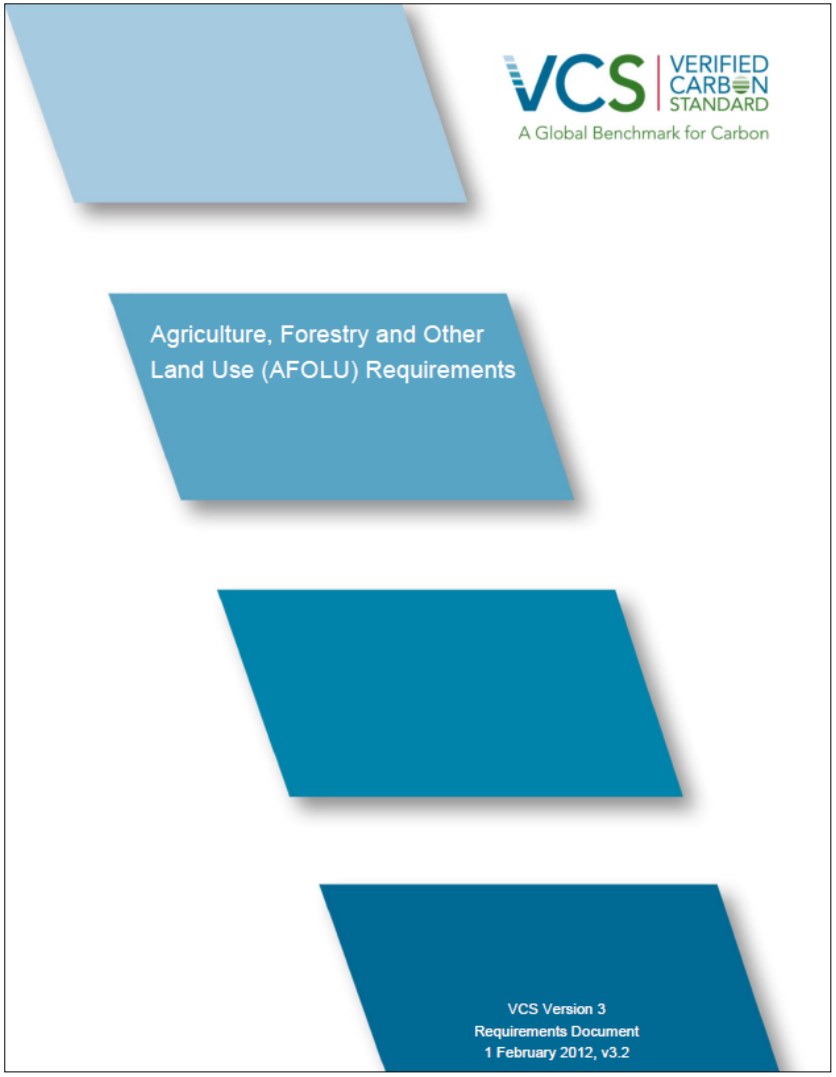
- Sub-national project activities to be included within a national framework (e.g. REDD+)
- Leakage to be accounted for (e.g. CDM)

Limits on causes of GHG fluxes (activity):

- Natural disturbances (e.g. KP-LULUCF)
- Product life/management cycle assessment (e.g. LCA bioenergy (e.g. EPA), FAO Dairy Sector, ISO?)
- Corporate (e.g. GHG protocol)

VCS AFOLU Requirements

- AFOLU Program Specific Issues
- Project Requirements
- Methodology Requirements
- Validation/Verification Requirements
- Buffer pool for risk of non-permanence



VCS AFOLU Activities

- ARR—Afforestation, Reforestation and Revegetation
  - Expands on the CDM A/R to include revegetation. Revegetation with woody biomass, does not require forest to reach forest definition.
- ALM—Agricultural Land Management
  - Improving cropland management, improving grassland management
- IFM—Improved Forest Management
  - Extending rotation age, going from a logged forest to a protected forest, low-productivity forest to a high productivity forest, reduced impact logging
- REDD—Reduced Emissions from Degradation and Deforestation
  - Avoiding unplanned deforestation and degradation and avoiding planned deforestation and degradation
- ACoGS—Avoided Conversion of Grasslands and Shrublands
  - Avoiding unplanned conversion and avoiding planned conversion
- WRC—Wetlands Restoration and Conservation (from PRC)
  - Restoring wetland conditions and avoiding conversion of wetlands
- JNR—Jurisdictional and Nested REDD+
  - National or sub-national jurisdiction scale accounting for REDD+

Time limits

- Project start date
- Project longevity, project crediting period
  - ARR/IFM projects with harvesting cannot credit above the long-term average carbon stock
- Reference levels (baselines)
  - Baselines reflect historical management practices or land use (typically require at least 10 years of historical data)
  - Baselines are only valid for 10 years—IFM, REDD and WRC projects must reassess the baseline every 10 years
- Monitoring
  - Periodic monitoring
  - Periodic calibration of models

Spatial Limits

- Establishing references levels (baselines)
  - REDD baselines require analysis of land use in a reference area
- Leakage
  - Activity shifting
    - monitor and estimate shifting of activities into lands adjacent to project
    - Jurisdictional approach helps to mitigate the need to calculate activity shifting leakage
  - Market leakage
    - Change in demand for a commodity that affect the supply of that commodity elsewhere
    - JNR Leakage Tool—emissions based on the likelihood of leakage occurring and the likely proportion that will impact forest

Activity Limits

- Project Boundary (Carbon pools and GHG sources)
  - Aboveground biomass in REDD
  - Soil carbon pool in ALM
  - N_20 and CH_4 in wetlands
- Activity Emissions (C pools + Fossil fuel)
  - Emissions from machinery in IFM
- Monitoring
  - Direct measurement of carbon pools
  - Monitoring activities as a proxy

Conclusions

When mitigation of a single land activity is quantified,

- Reference level and actual level apply to the same land area [space limit]
- Land based accounting [activity limit]
- To use historical data for projection and validation of modelled reference levels [time limit]
- Estimating C stock changes over a time period to take into consideration management cycles [time limit]
- Ensuring sustainability (e.g. via safeguards) [activity limit]
- Nesting sub-national up to a national total, transferring liability for leakage and permanence at national level [time and space limit]
- Factoring out of un-controlled emissions (and subsequent removals) [activity limit]

Additional guidance are available (e.g. GFOI Methods and Guidance, VCS AFOLU Requirements, World Bank accounting toolkits, GOFC-GOLD Sourcebook, WRI GHG Protocol) and their number is growing, how to ensure comparability of quantified mitigation among those?