LULUCF and the connection to REDD+

What LULUCF is about

- Under the Kyoto Protocol, Article 3, paragraphs 3 and 4, stated the contribution of the Land Use, Land-Use Change and Forestry (LULUCF) activities in Annex I Parties to the **mitigation** of Climate Change

- Decision 16/CMP.1 lists under LULUCF the following human activities:

afforestation/reforestation **deforestation** **forest management**	**Forest Land**
cropland management **grazing land management**	**Agrarian land**
revegetation	**other land uses**

LULUCF activities - Decision 16/CMP.1

Short Definitions

- **Afforestation** and **Reforestation** activities are the direct human-induced conversion of non-forested land to forested land
- **Deforestation** activity is the direct human-induced conversion of forested land to non-forested land
- **Forest Management** activity is a system of practices for stewardship and use of forest in a sustainable manner
- **Cropland management** activity is the system of practices on land used for crop production
- **Grazing land management** activity is the system of practices on land used for livestock production
- **Revegetation** is a direct human-induced activity to increase carbon stocks on sites through the establishment of vegetation

What mitigation is about

Mitigation

- In the context of climate change, a mitigation action/activity is a human intervention to reduce its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs

Accounting

- Accounting is a fundamental function of any mitigation mechanism/activity/action, and it is aimed at quantifying the impact of any human action/activity in terms of:
    - level of GHG fluxes, and
    - change in GHG fluxes compared to a level that does not include the implemented action/activity

LULUCF accounting

- Decision 16/CMP.1 (Land use, Land-Use Change and Forestry) rules the accounting of:
  - carbon stock changes in terrestrial carbon pools,
  - some emissions[1] from other sources

- Two accounting approaches:
  - gross-net: **total** carbon stock changes and emissions, occurred since the start of the commitment period or the onset of the activities, whichever comes later;
    - ARD activities, and Forest management with cap -
  - net-net: **total** carbon stock changes, and emissions, occurred since the start of the commitment period (01/01/2008) or the onset of the activities, whichever comes later **minus** five times the base year emissions;
    - Cropland and Grazing Land management, Revegetation -

(1) caused by fertilization, drainage, oxidation of soil organic matter, liming and biomass burning

Special provisions

- Forest management activity may issue credits for net removals up to an assigned value (cap). The value has been calculated on the basis of the 15% of historical removals and should not exceed the 3%of the Party's base year emissions
- Under AR activities, debits resulting from harvesting shall not be greater than credits accounted for on that unit of land
- If ARD activities result in an aggregated net emissions, then under FM an additional (to the cap) amount of credits may be issued, to offset that net emissions, up to a level of 9.0 Mt of carbon per year

connection to REDD+

- **Both** LULUCF and REDD+ are **mechanisms** aimed at delivering **mitigation** by implementing human activities on **forest** land and its carbon stocks

- **Both** LULUCF and REDD+ are instruments of **promotion of sustainable development** (see Article 2 of the Kyoto Protocol and Cancun Accords)

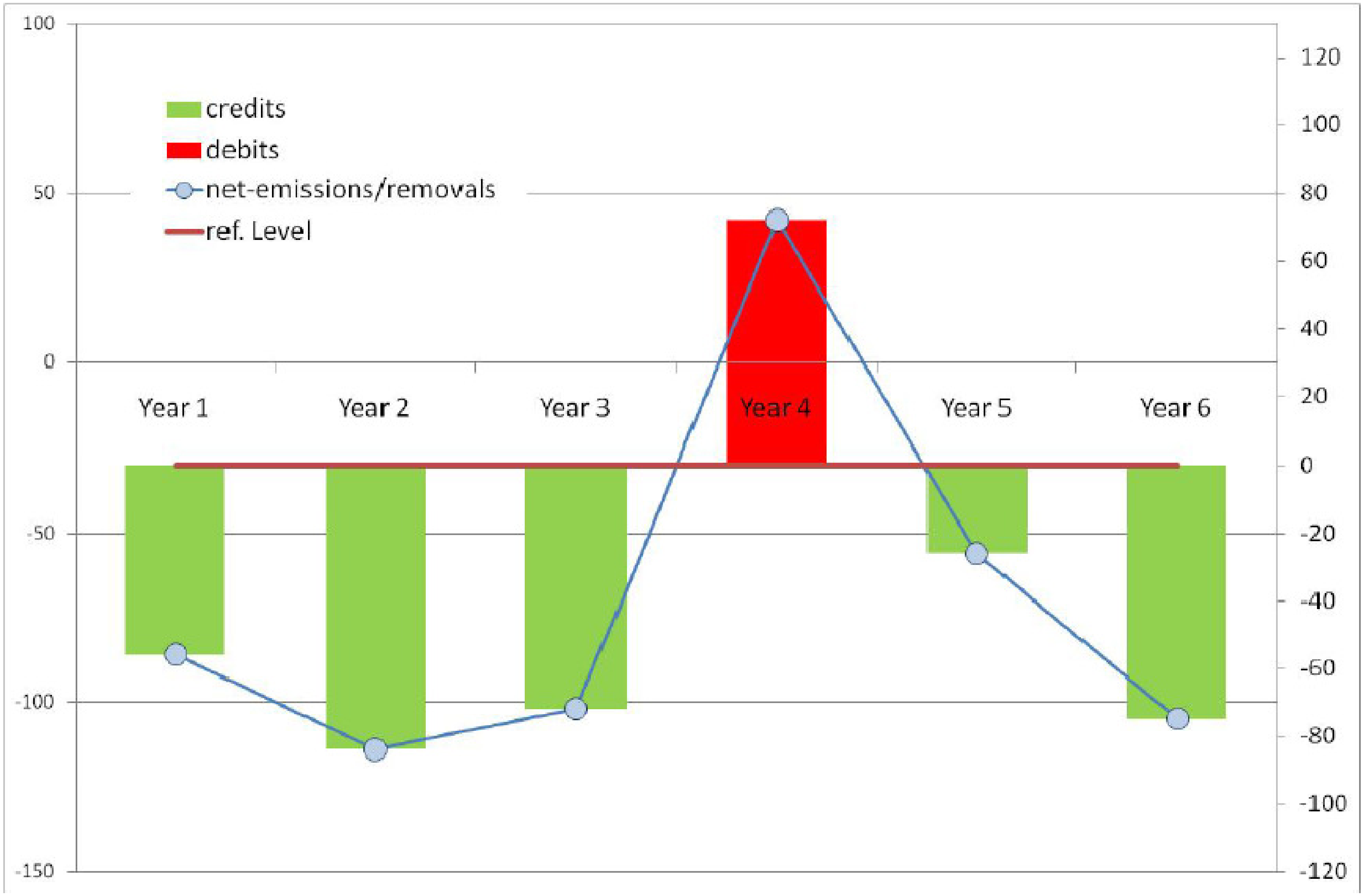
Promoting sustainable development

- To **promote** sustainable development a mechanism shall provide incentives for changes (in technologies, practices and human behaviors) towards a sustainable low carbon development which are additional to what should have been occurred in the absence of the mechanism
  (i.e. the mechanism should provide incentives proportional to the positive **deviation from the business-as-usual scenario**)

- **Both** should then **incentivize reductions** in emissions and increases in removals of greenhouse gases **over a reference level** (which should be calculated under the business-as-usual scenario)

Reference Level

how would it work?



Is LULUCF accounting promoting sustainable development while mitigating climate change? The gross-net accounting

gross-net accounting

- For ARD and Forest Management activities there is not a reference level (it is 0) so that incentives are delivered even for business-as-usual removals

To account for business-as-usual removals is a failure in delivering mitigation and is also a failure in promoting sustainable development

Is LULUCF accounting promoting sustainable development while mitigating climate change? The net-net accounting

net-net accounting

- For Cropland management, Grazing land management and Revegetation the reference level is the level of net emissions in the base year

  The presence of a reference level ensures that only changes from that level are incentivized (i.e. mitigation action/activities incentivized)

  However, because of the base year net emissions do not represent the level of net emissions under the business-as-usual scenario, incentives could be delivered also for business-as-usual changes which are occurred from a so far reference level

  To account for business-as-usual changes is a failure in promoting sustainable development

Elements for improving effectiveness and environmental integrity of the LULUCF accounting

- To achieve mitigation, carbon stocks can be treated in the three ways:

  - kept on the land thereby reducing emissions;

  - used as renewable sources of energy (bioenergy);

  - used as renewable material (HWP).

All options should be available to countries as far as these are implemented in a sustainable way

Therefore a mere shift of carbon stocks among options should not be debited while credits should be delivered only for net increases of carbon stocks.

Elements for improving effectiveness and environmental integrity of the LULUCF accounting

- Therefore, the accounting should:
  - be Complete (accounting of all sources and sinks is fundamental for delivering incentives towards real mitigation actions; indeed, partial accounting results in distortions which may deliver incentives for mere displacement of emissions), so that:
    - be mandatory for all activities (with the aim to cover the whole national territory)
    - cover all carbon pools, including HWP;
  - exclude all business-as-usual removals and emissions (including bioenergy) from being credited/debited
  - exclude net emissions from extreme events (*Force Majeure*, events beyond the control of, and not materially influenced by, the Party)

Steps undergone till now in improving LULUCF accounting

Forest Management

- In Cancun a Decision on LULUCF has been taken that asks for setting a reference level for forest management i.e. <u>moving to a net-net accounting</u>

- The reference level should be based on business-as-usual activities in forests so including the related emissions and removals <u>i.e. moving to a system that provide incentives only to additional deviation from the business-as-usual scenario</u>

- the net-net accounting with a BAU reference level allows to not account for removals resulting from: (i) elevated carbon dioxide concentrations above their pre-industrial level; (ii) indirect nitrogen deposition; (iii) the dynamic effects of age structure resulting from activities and practices before the reference year;
  as requested by LULUCF accounting principles – Decision 16/CMP.1 Paragraph 1 (h)

Consistency of accounting framework with sustainable development goal

- However, inclusion of CO_2 emissions in the reference level shall be allowed only as far as forests are harvested at a sustainable rate (see table 1s2 attached to Decision 18/CP. 8)[1]

- Sustainable rate of harvesting means that within the rotation period carbon losses are lower or equal than carbon gains

- That is under a sustainable management of forests, where all carbon pools are reported (including HWP), the national reference level is normally expected not to be positive

(1) CO_2 emissions [for biomass used as fuel] are not included in the national total as it is assumed that the biomass is produced in a sustainable manner. If the biomass is harvested at an unsustainable rate, net CO_2 emissions are accounted for as a loss of biomass stocks in the Land Use, Land-Use Change and Forestry sector

connection with REDD+

- All elements being fixed for the accounting of forest management might be applied to the accounting of the four REDD+ activities related to the management of carbon stocks in forest land namely: Reducing emissions from forest degradation; Conservation of forest carbon stocks; Sustainable management of forest; Enhancement of forest carbon stocks.
  - to be accounted all together to cover the whole forest area subject to human activities;
  - to account for all carbon pools, including HWP;
  - the reference level should be based on a business-as-usual scenario which is built with historical data and taking into consideration national circumstances;
  - all business-as-usual removals and emissions (including bioenergy) shall be included in the reference level
  - *Force Majeure* net emissions be excluded from accounting

Thank You