



Overview of the Land Use, Land Use Change and Forestry

LULUCF

concepts and principles

Asger Olesen, DG Climate Action
LULUCF Stakeholder Meeting
Brussels, 30th August 2012

Agenda

1. Setting the stage: Context and scenarios

- I. International context: KP and Convention, Post-2020, other initiatives
- II. EU context: Climate & Energy Package, CAP, Bio-economy

2. On LULUCF: Terminology and scope

- I. The scope of LULUCF
- II. Accounting principles: Reference Level, Net-Net and Gross-Net
- III. Some concepts: Natural Disturbance and Harvested Wood Products
- IV. Focus: Forests and Agricultural soils

3. Conclusions and roads forward

- I. Map – current position and ways forward
- II. Messages to carry forward

In total 21 slides to come ~ 45 minutes

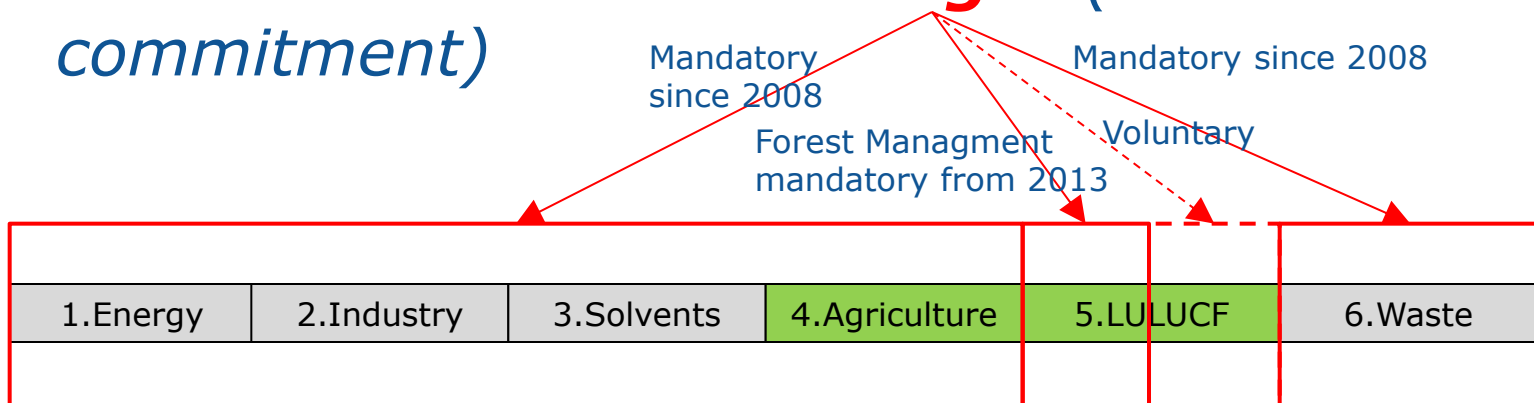
1. LULUCF context overview

INTERNATIONAL AND EU CLIMATE POLICY

-PRESENT AND FUTURE

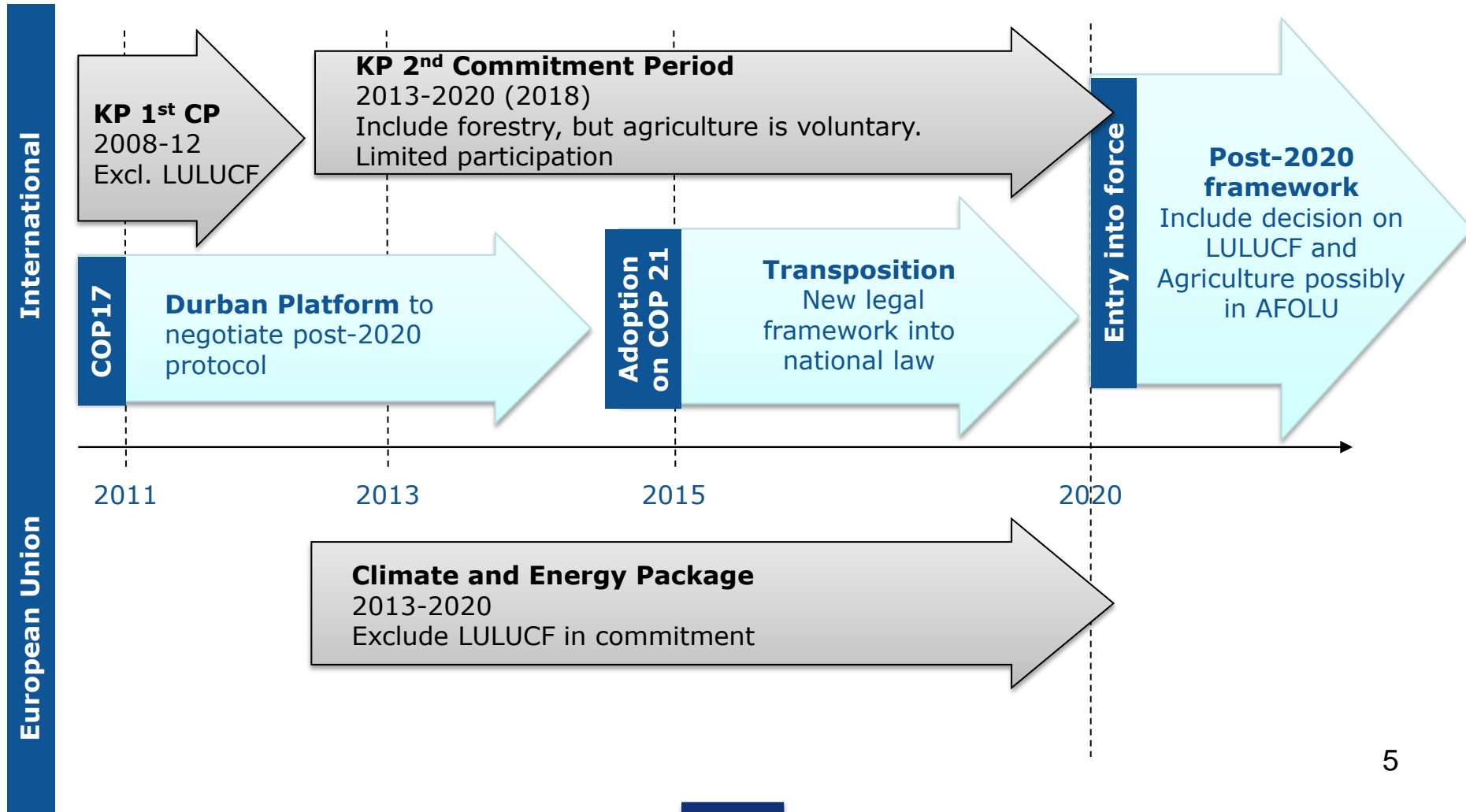
1.1 The international frame: UNFCCC and Kyoto Protocol

- © UNFCCC (Convention) obligation to **report** GHG using sectorial approach (National Inventories)
- © KP (Protocol) obligation to **account** GHG using same sectors towards a **target** (reduction commitment)



Reporting = provide estimates of GHG emissions and removals in a comparable, consistent, transparent way
Accounting = put numbers together to calculate an estimate of the impact of sector on the atmosphere in tonnes of CO₂-equivalents
Reduction commitment = setting a target for the estimated impact

1.2 The future: Steps towards post-2020



1.3 Who does what, when and how?

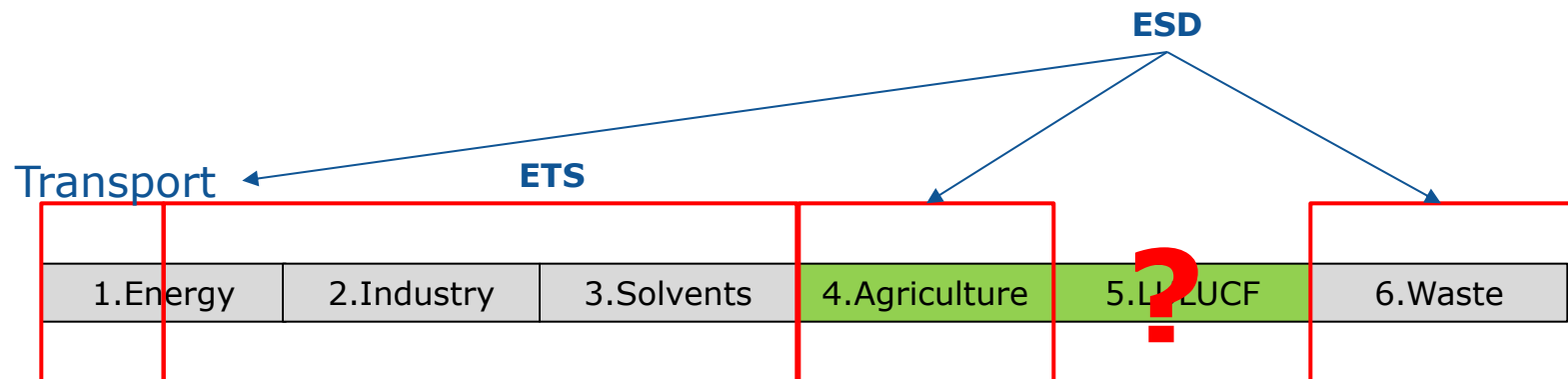


1.4 The European Frame: Climate and Energy Package

EU instruments to reach the “20-20-20 target”:

“all sectors of the economy should contribute”
Council and the European Parliament in 2008

- EU **Emission Trading Scheme** (ETS) to contribute to 20% Green House Gas (GHG) emission reductions; target: -21% (2005-2020)
- **Effort Sharing Decision**: regulates GHG emissions in non-ETS sectors;
 - EU 27 emission target for non-ETS sector: -10% by 2020 (relative to 2005)
 - Agriculture included (non-CO2 GHG, i.e. Methane and N2O)
 - CO2 from LULUCF excluded: forestry, agricultural soils
- Directive to reach **20% renewable energy** by 2020.



1.5 Scenarios for LULUCF

Commission impact assessment:

Option 1: No EU action

Option 2: Include LULUCF as a separate policy framework

I. No mitigation targets

II. Sector mitigation targets (for illustrative purposes only)

Option 3: Include LULUCF in the Effort Sharing Decision



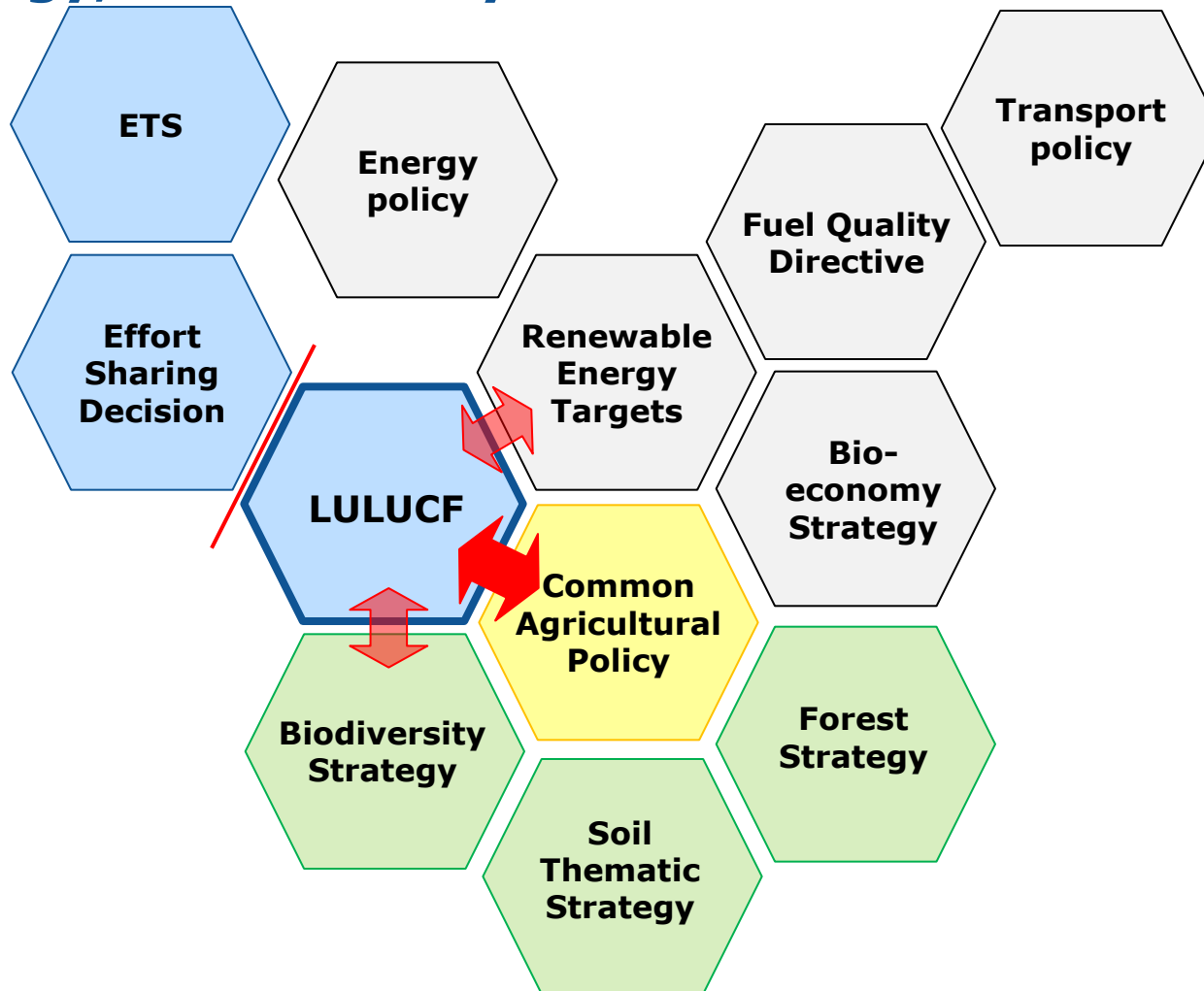
Two step process:

Step 1 is an accounting framework

Step 2 is a mitigation target



1.6 Links: CAP, ESD, REE roadmap, Biofuels, Soil Thematic Strategy, Bio-economy...



2. Focus on terminology and concepts of

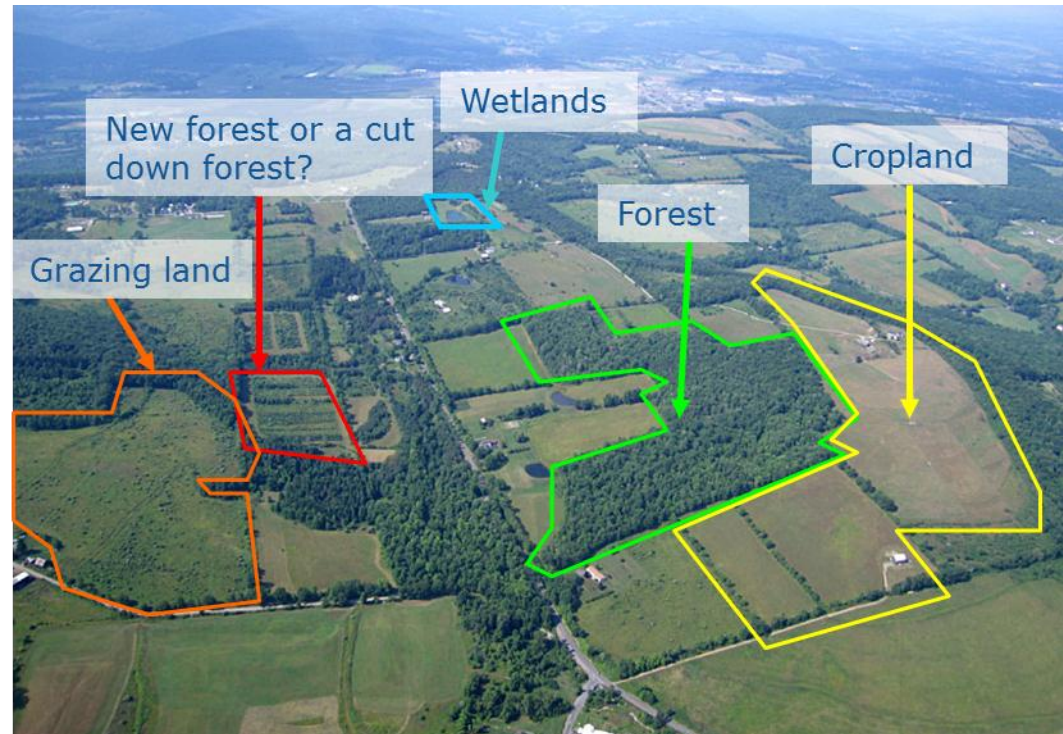
LAND USE, LAND USE CHANGE, AND FORESTRY

2.1 LULUCF = Land Use, Land Use Change and Forestry

For the purpose of keeping stock of greenhouse gases in the context of the Convention and the Kyoto Protocol, LULUCF is an accounting sector that includes all human management of vegetation and soils.

Accounting rules make up a methodology to structure and categorize data

Constructing the GHG table and sourcing data is a desk task



NOTE: LULUCF applies to annex 1 countries (developed nations) only, and must not be confused or mixed with REDD+ which concerns developing nations

2.2 Scope of LULUCF in EU



Outside accounting

Within LULUCF

Timber



Managed forests



Wetlands



Unmanaged forests



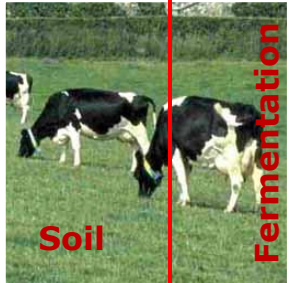
Annual crops



Carbon in annual crops not accounted.

Soil

Grazing land



Soil

Fermentation

Biogas on farm



Effort Sharing Decision

Energy crops



Carbon in perennial energy crops accounted as emission when harvested

Manure management

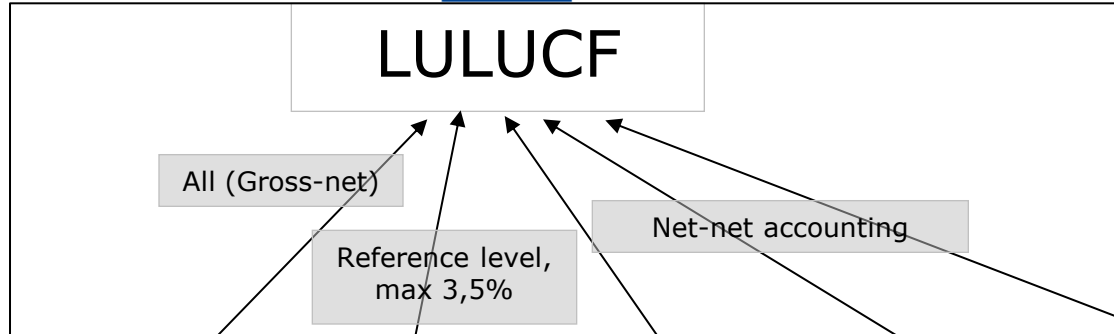


ETS Substitution effect awarded in the ETS

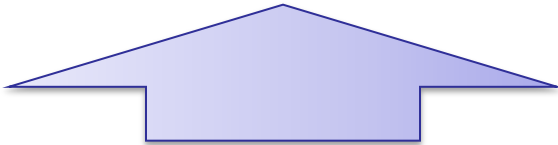
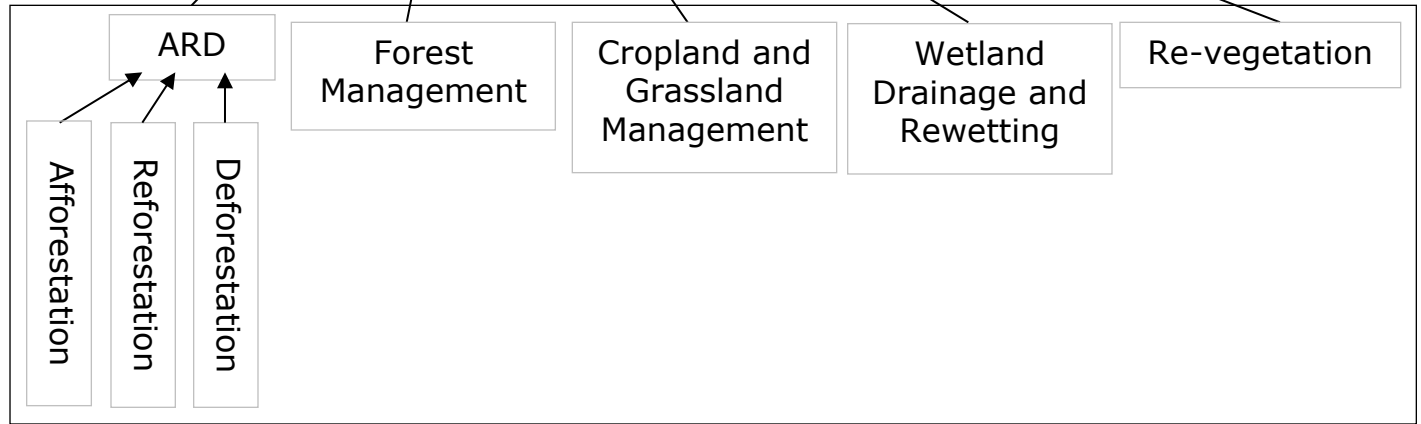
2.4 Accounting and reporting hierarchy



ACCOUNTING:



ACTIVITIES:



POOLS:



2.5 Terminology: Accounting

Reference Level

Crediting or debiting relative to a projected performance

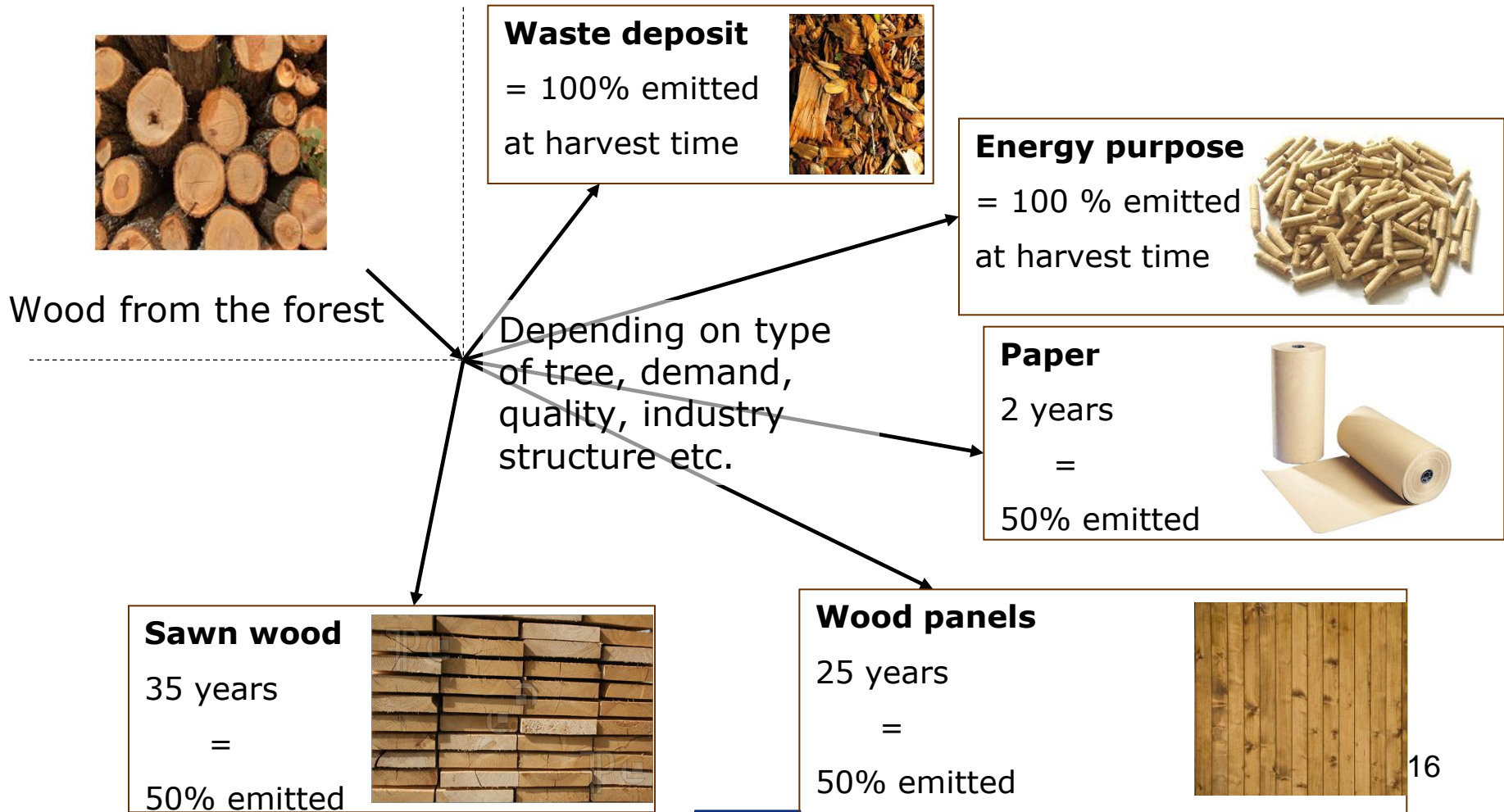
Net-Net accounting

Crediting or debiting relative to the GHG balance in the base year (1990)

Gross-Net Accounting

All emissions and removals since the base year

2.6 Terminology: Harvested Wood Products (HWP)



2.7 Natural Disturbance



1. Lightning cause a forest fire



2. The forest owner burns stubs and residue to return nutrients to the soil

Both forest fires release substantial amount of carbon to the atmosphere as CO₂. The first incident should not influence the greenhouse gas accounting of a member state. The second should be reflected in accounting.

Natural disturbances are any non-anthropogenic events or circumstances that cause significant emissions in forests or agricultural soils and the occurrence of which are beyond the control of the relevant Member State provided the Member State is objectively unable to significantly limit the effect of the events or circumstances on emissions

2.8 Forests

- ✓ *LULUCF accounting rules agreed upon internationally. Mandatory for all Member States to apply from 2013 onwards in the KP context*
- ✓ *For accounting purposes LULUCF distinguishes between management standing forests and the activities of planting or clear felling forests*
- ✓ *Wood harvested enters into the harvested wood products pool where the emissions/removals are decided by the use of the wood*
- ✓ *LULUCF accounting rules for forests will allow MS to capture the impact of forest policies in their GHG accounts. It includes no policy measures.*

2.9 Agriculture: limitations

- ✓ *LULUCF accounting rules for agricultural land exists in the KP context. Whether to use them or not is left to the individual Member State to decide*
- ✓ *Both in the EU and internationally LULUCF only concerns emissions and removals related to the management of lands – not from animals or manure*
- ✓ *LULUCF accounting rules are about stock keeping of greenhouse gasses. It will reflect the impact of practices and measures under the CAP in Member State accounts. LULUCF accounting rules include no policy measures*

2.10 Example of reporting: mineral soil on cropland



Difference of soil C stock (SOM, 0-30 cm) in the yr 2010

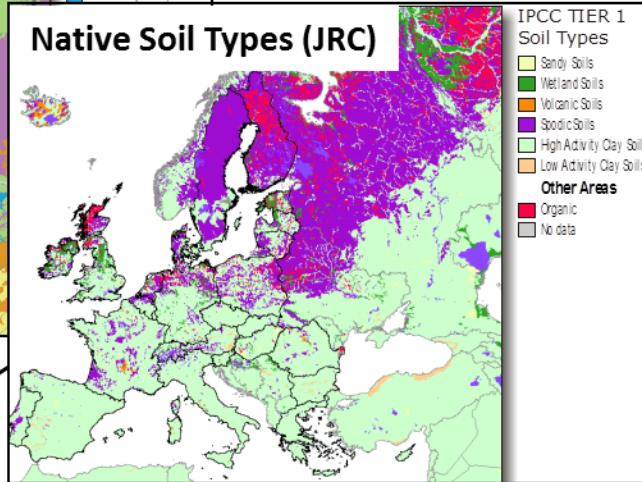
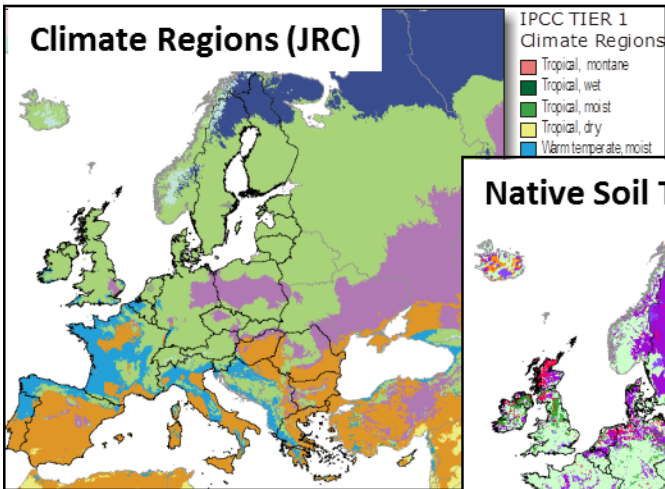
$$\Delta C_{\text{mineral soil}} = (SOC_{2010} - SOC_{1990}) / 20$$

$$SOC = \sum_x (SOC_{REF} * F_{LU} * F_{MG} * F_I * \text{area})$$

Stratify CL area by broad climate, soil and management type, and apply **C stock * C stock change factors** (default IPCC values for **tier 1**, country-sp. information for **tier 2**)

Reference soil C (by soil/climate):

Stock change factors:



	Soil		
Climate			

IPCC table, for tier-1

Factor	level	value
F_{LU} (land use)	Long-term cultivated	0.8
	Paddy rice	1.1
	Tree crop	1.0
	Set-aside	0.93
F_{MG} (tillage)	full	1.0
	reduced	1.02
	No-till	1.1
F_I (input)	low	0.95
	medium	1.0
	High, manure High, no manure	1.04 1.37

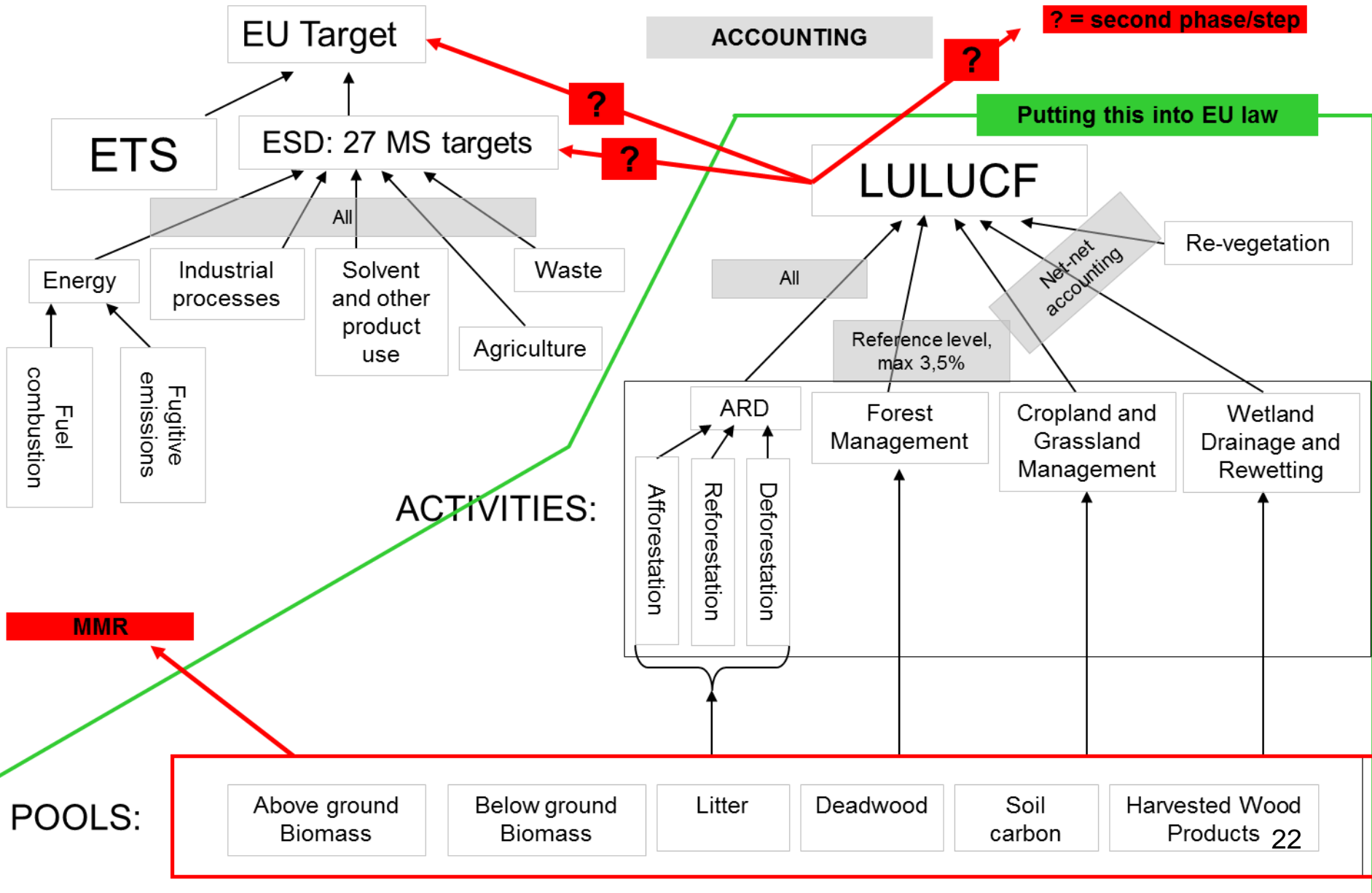
20

Example from IPCC table, for tier-1

3. Messages for the debate:

SUMMARY

3.1 Map of status quo and roads forwards



3.2 Summary

- ✓ *LULUCF accounting rules were agreed in Durban, and the Union will follow these*
- ✓ *LULUCF is one sector out of six: It concerns emissions and removals from management of land – not livestock or biofuels*
- ✓ *LULUCF categorizes the landscape by the management activity undertaken: Forest Management, Afforestation, Deforestation, Reforestation, Re-vegetation, Cropland and Grazing Land Management and Wetland Rewetting and Drainage*
- ✓ *LULUCF will capture GHG effects of measures undertaken in the Common Agricultural Policy or to reach Renewable Energy targets*