

# Understanding Land Use in the UNFCCC

Iversen P., Lee D., and Rocha  
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Presented by:

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## Understanding Land Use in the UNFCCC



MAY 2014

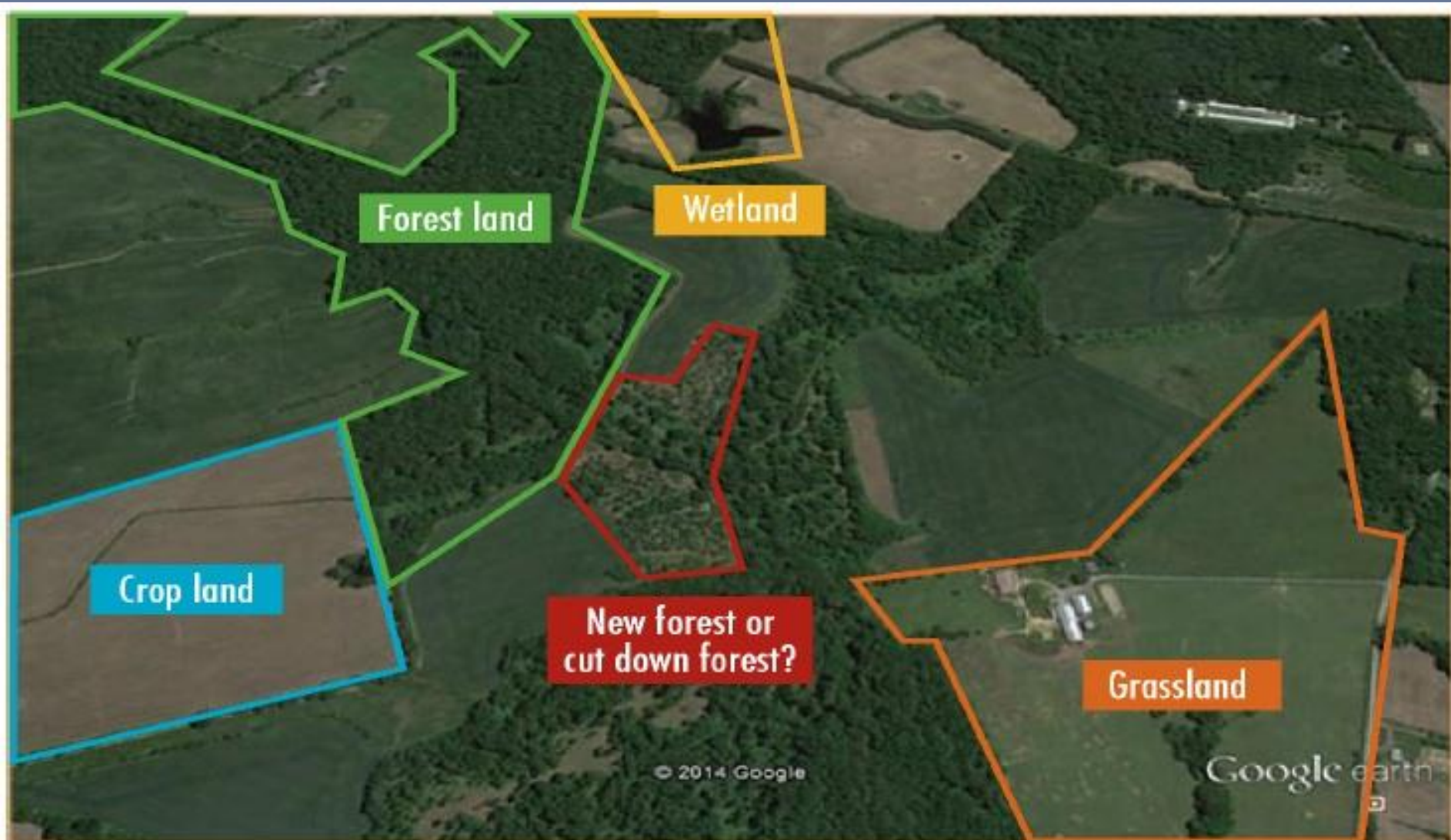
# CONTENT

- ▶ Introduction to land use
- ▶ Reporting and Accounting
- ▶ Baselines and reference levels
- ▶ Natural disturbances
- ▶ Harvested wood products
- ▶ Clean Development Mechanism and Joint Implementation
- ▶ Safeguards
- ▶ Future of land use under the UNFCCC

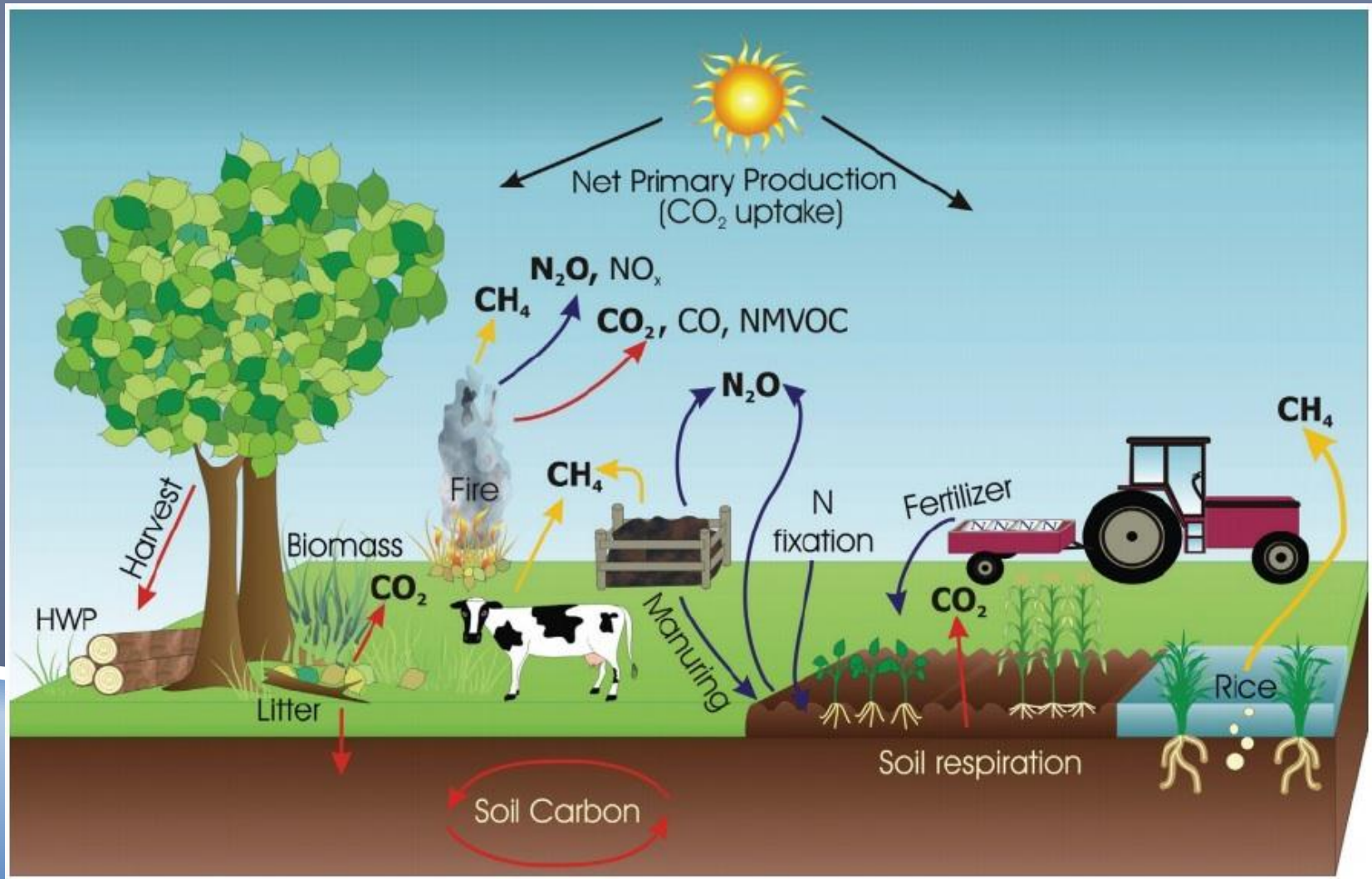
# INTRODUCTION



# WHAT IS “LAND USE”?



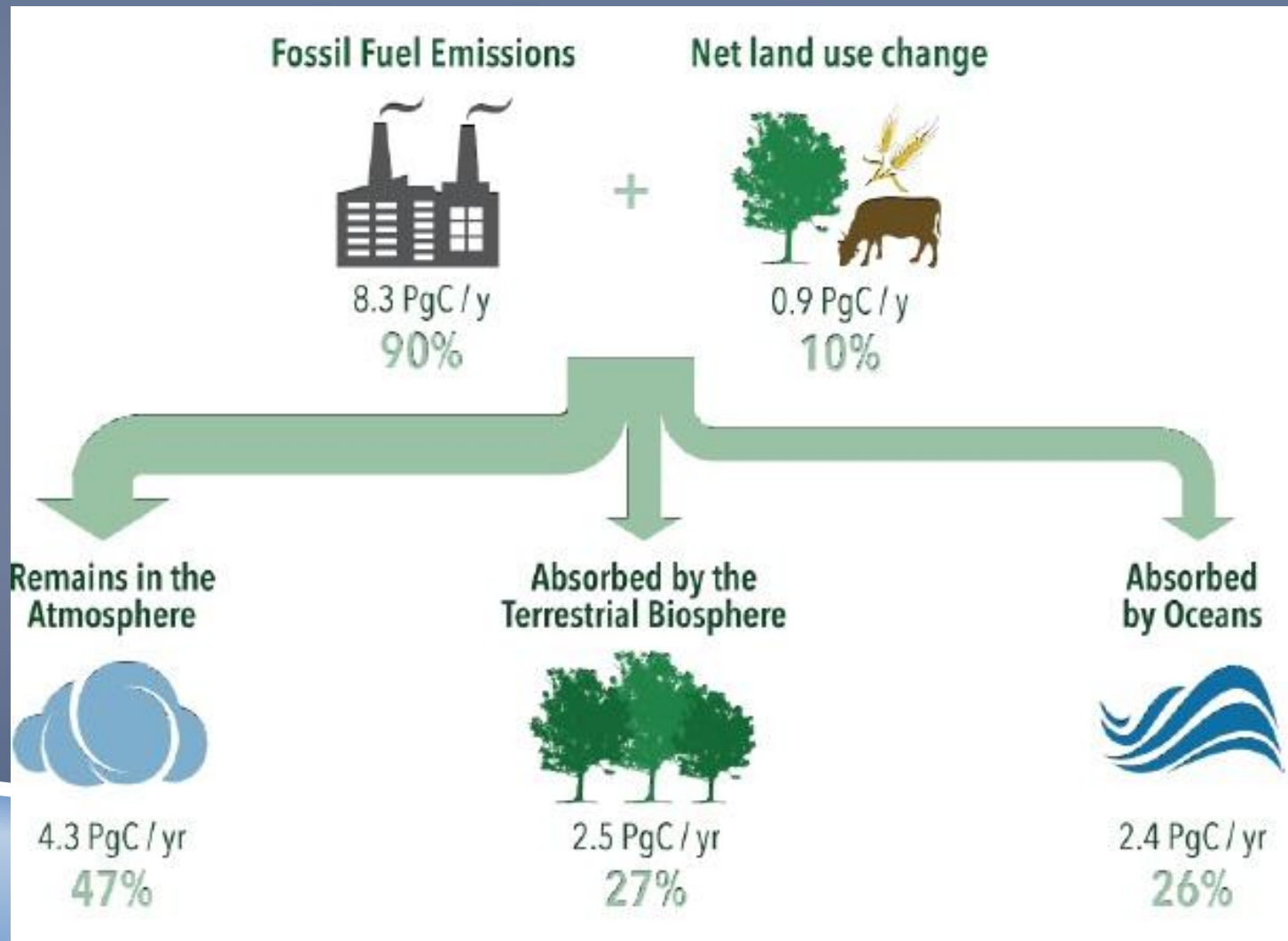
# ILLUSTRATION OF LAND USES THAT RESULT IN EMISSIONS AND REMOVALS



# WHY IS LAND USE DIFFERENT FROM OTHER SECTORS?

- ▶ Land use can act as a sink or a source
- ▶ Natural effects can be relatively large
- ▶ It is difficult to separate natural and anthropogenic effects
- ▶ Trends can be cyclical
- ▶ Legacy effects
- ▶ Saturation
- ▶ Non-permanence
- ▶ Emissions and removals are distributed
- ▶ Recalculations can result in significant changes in reported emissions/removals
- ▶ Uncertainties can be high

# WHY IS LAND USE IMPORTANT AND WHAT IS ITS RELATIVE CONTRIBUTION TO GHG EMISSIONS?



Global atmospheric CO<sub>2</sub> budget, 2002-2011

# IPCC FIFTH ASSESSMENT REPORT WORKING GROUP 3

Quote:

“Land-related mitigation, including bioenergy, could contribute 20 to 60% of total cumulative abatement to 2030. However, policy coordination and implementation issues are challenges to realizing this potential.”

# REPORTING AND ACCOUNTING LAND USE

# REPORTING UNDER THE UNFCCC

- ▶ Under the UNFCCC, all Parties have commitments to promote mitigation actions and to report anthropogenic emissions by sources and removals by sinks, including from the land use and forestry sector (Article 4 paragraph 1a and 1d)

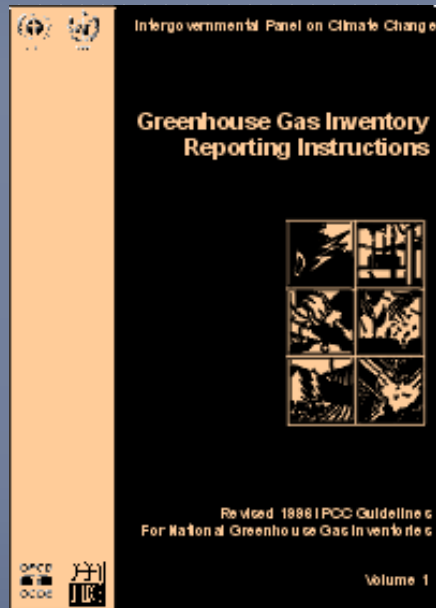


**United Nations**  
Framework Convention on  
Climate Change

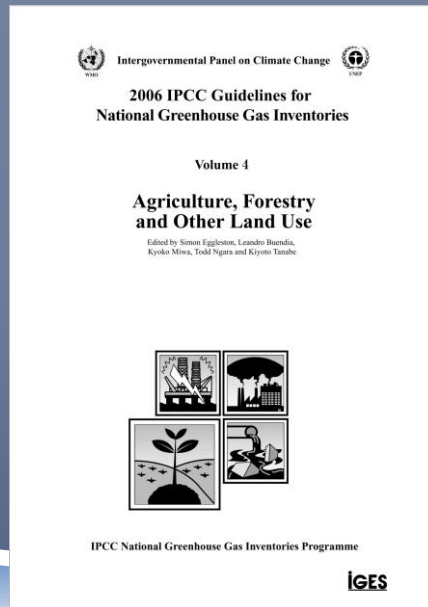
# SUMMARY OF REPORTING REQUIREMENTS UNDER THE UNFCCC

	Annex I	Non-Annex I
National Communications	Periodic (every 4 years); almost all Annex I Parties have submitted their 6 <sup>th</sup> national communication.	Periodic (every 4 years); the first was due within 3 years of ratification; a second and, where appropriate, 3 <sup>rd</sup> has been encouraged by the COP. Most non-Annex I Parties have submitted their 2 <sup>nd</sup> National Communication.
National GHG Inventories	Annual submission including: <ul style="list-style-type: none"> <li>• CRF tables</li> <li>• National Inventory Report<sup>37</sup></li> </ul>	Should be included as part of the National Communications (every 4 years)
IPCC Guidance	Starting in 2015, Annex I shall use the <i>2006 Guidelines</i> and updated CRF tables; plus the <i>2003 LULUCF-GPG</i> and <i>2013 Wetlands Supplement</i>	<i>1996 Guidelines</i> may be used along with the <i>2003 LULUCF-GPG</i> ; <i>2006 Guidelines</i> (and <i>2013 Wetlands Supplement</i> ) are encouraged.
Additional reporting (including national GHG inventories)	Biennial reports; first submission by January 2014	Biennial update reports, first submission by December 2014 (Least Developed Countries may submit at their discretion)

# GUIDANCE ON HOW TO ESTIMATE ANTHROPOGENIC EMISSIONS AND REMOVALS IN THE LAND-USE SECTOR



1996 Revised IPCC Guidelines



2006 IPCC Guidelines



GPG-LULUCF



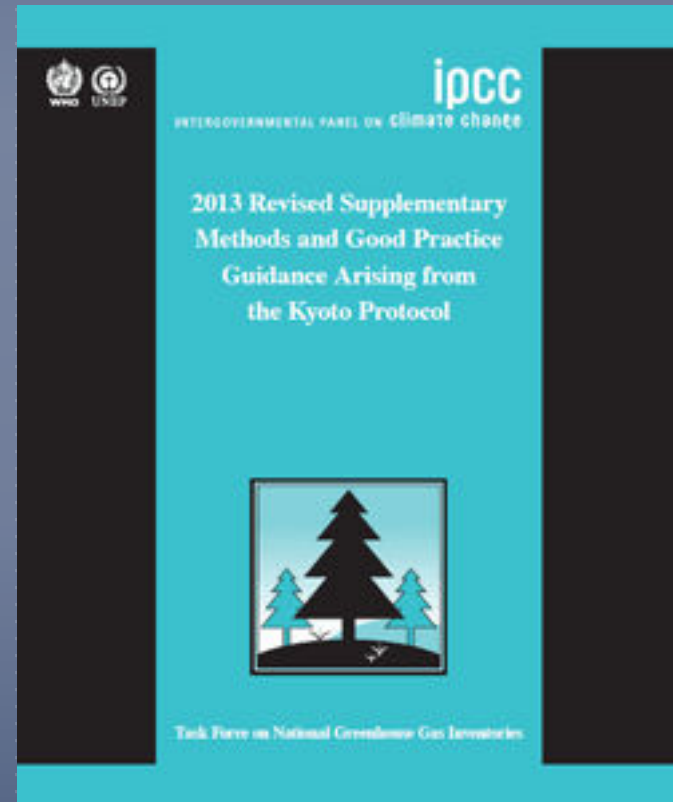
Wetlands Supplement

# THE SCOPE OF REPORTING UNDER THE UNFCCC

	Currently Used CRF Tables For use with 1996 IPCC Guidelines and the 2003 LULUCF-GPG <sup>41</sup> (adopted at COP-11, for use starting 2007)	New CRF Tables For use with 2006 IPCC Guidelines (adopted at COP-19, for use starting 2015 by Annex I countries)
Agriculture	<ul style="list-style-type: none"> <li>• Enteric fermentation</li> <li>• Manure management</li> <li>• Rice cultivation</li> <li>• Agricultural soils</li> <li>• Prescribed burning of savannahs</li> <li>• Field burning of agricultural residues</li> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• Enteric fermentation</li> <li>• Manure management</li> <li>• Rice cultivation</li> <li>• Agricultural soils</li> <li>• Prescribed burning of savannahs</li> <li>• Field burning of agricultural residues</li> <li>• Liming &amp; Urea application<sup>42</sup></li> <li>• Other carbon-containing fertilizers</li> <li>• Other</li> </ul>
Land Use, Land-use Change and Forestry	<ul style="list-style-type: none"> <li>• Forest Land</li> <li>• Cropland</li> <li>• Grassland</li> <li>• Wetlands</li> <li>• Settlements</li> <li>• Other Land</li> <li>• Other (e.g. Harvested Wood Products)</li> </ul>	<ul style="list-style-type: none"> <li>• Forest Land</li> <li>• Cropland</li> <li>• Grassland</li> <li>• Wetlands</li> <li>• Settlements</li> <li>• Other lands</li> <li>• Harvested wood products</li> <li>• Other</li> </ul>

# REPORTING AND ACCOUNTING UNDER THE KYOTO PROTOCOL

- ▶ The changes in carbon stock or GHG emissions relating to LULUCF activities by Annex I Parties under Articles 3.3 of the KP and elected under Article 3.4 (see next section on Scope of KP Accounting) must be reported for each year of the commitment period, beginning with the start of the commitment period, or with the start of the activity, whichever comes later.



KP Supplement

# THE SCOPE OF KYOTO PROTOCOL ACCOUNTING

KP LULUCF Activities	1 <sup>st</sup> Commitment Period	2 <sup>nd</sup> Commitment Period
Afforestation (3.3)	Mandatory	Mandatory
Reforestation (3.3)		
Deforestation (3.3)		
Forest Management (3.4)	Voluntary	Voluntary  (Mandatory if elected in 1 <sup>st</sup> CP)
Cropland Management (3.4)		
Grazing land Management (3.4)		
Revegetation (3.4)		
Wetland Drainage & Rewetting (3.4)	Not specified	

# REDD+

UNFCCC identified REDD+ Activities	IPCC categories	Kyoto Protocol accounting
Reducing emissions from deforestation	Forests converted to other lands	Deforestation
Reducing emissions from degradation	Forests remaining as forests	Forest management
Conservation of forest carbon stock	Forests remaining as forests	Forest management
Sustainable Management of Forests	Forests remaining as forests	Forest management
Enhancement of forest carbon stock	Other lands converted to forests, Forests remaining as forests	Afforestation, Reforestation, Forest management

# DIFFERENCES IN CURRENT LAND COVERAGE

	UNFCCC reporting (All Parties)	Kyoto Protocol 2 <sup>nd</sup> commitment period (CP) QELRC <sup>64</sup> (Annex I KP Parties)	Kyoto Protocol CDM (non-Annex I)	REDD+ (developing countries)	NAMAS (non-Annex I)
Purpose	Reporting only	Legally-binding economy wide targets; liabilities if commitment unmet	Incentives provided for non-Annex I	To contribute to mitigation action in the forest sector and to seek results-based finance <sup>65</sup>	To enhance mitigation action
Scale	National	National	Project	National, or subnational <sup>66</sup> as an interim step	Not specified
Scope	<p><b>Comprehensive coverage of LULUCF:</b></p> <ul style="list-style-type: none"> <li>• Forest land</li> <li>• Cropland</li> <li>• Grassland</li> <li>• Wetlands</li> <li>• Settlements</li> <li>• Other land</li> </ul> <p>Non CO<sub>2</sub> emissions from agricultural practices<sup>67</sup></p>	<p><b>Mandatory activities:</b></p> <ul style="list-style-type: none"> <li>• LULUCF</li> <li>• Afforestation</li> <li>• Reforestation</li> <li>• Deforestation</li> <li>• Forest management</li> </ul> <p>Comprehensive coverage of agricultural practices</p> <p>Voluntary (unless elected in the 1<sup>st</sup> CP):</p> <ul style="list-style-type: none"> <li>• Cropland management</li> <li>• Grazing land management</li> <li>• Revegetation</li> <li>• Wetland drainage and rewetting</li> </ul>	<p><b>Allowed activities:</b></p> <p>LULUCF</p> <ul style="list-style-type: none"> <li>• Afforestation</li> <li>• Reforestation</li> </ul> <p>Non CO<sub>2</sub> emissions from agricultural practices</p>	<p><b>Activities involved:</b></p> <ul style="list-style-type: none"> <li>• Deforestation</li> <li>• Forest degradation</li> <li>• Forest conservation</li> <li>• Sustainable management of forests</li> <li>• Enhancement of forest carbon stocks</li> </ul>	<p><b>Not specified:</b></p> <p>A wide range of activities in the land use sector have been submitted.</p>

# COMPARISON OF GUIDANCE PROVIDED FOR UNFCCC REPORTING, KP ACCOUNTING AND REDD+

	UNFCCC reporting (all Parties)	Kyoto Protocol (Annex I Parties to KP)	REDD+ (developing countries)
Purpose	Reporting	Compliance	Enhance mitigation action; possibly receive results-based finance
Reference levels	None required	Allowed for forest management; Party proposed	Party proposed based on historic emissions with adjustments; allows for a stepwise approach
Natural disturbances	Use of managed land proxy	Provision to factor out of accounting	No provisions
HWPs	Multiple approaches provided in IPCC guidelines	Required in the 2 <sup>nd</sup> CP using a production approach	No provisions
Policies and measures	Little to no guidance provided	Does not mandate how a country meets a target	For example, requests countries to develop national strategies and action plans; and address drivers of deforestation and forest degradation, and land tenure, forest governance, and gender issues. <sup>14</sup>
Social and environmental safeguards	Little to no guidance provided	No requirements	Must address a list of social and environmental safeguards and report to the UNFCCC, particularly if seeking results-based payments

# BASELINES AND REFERENCE LEVELS



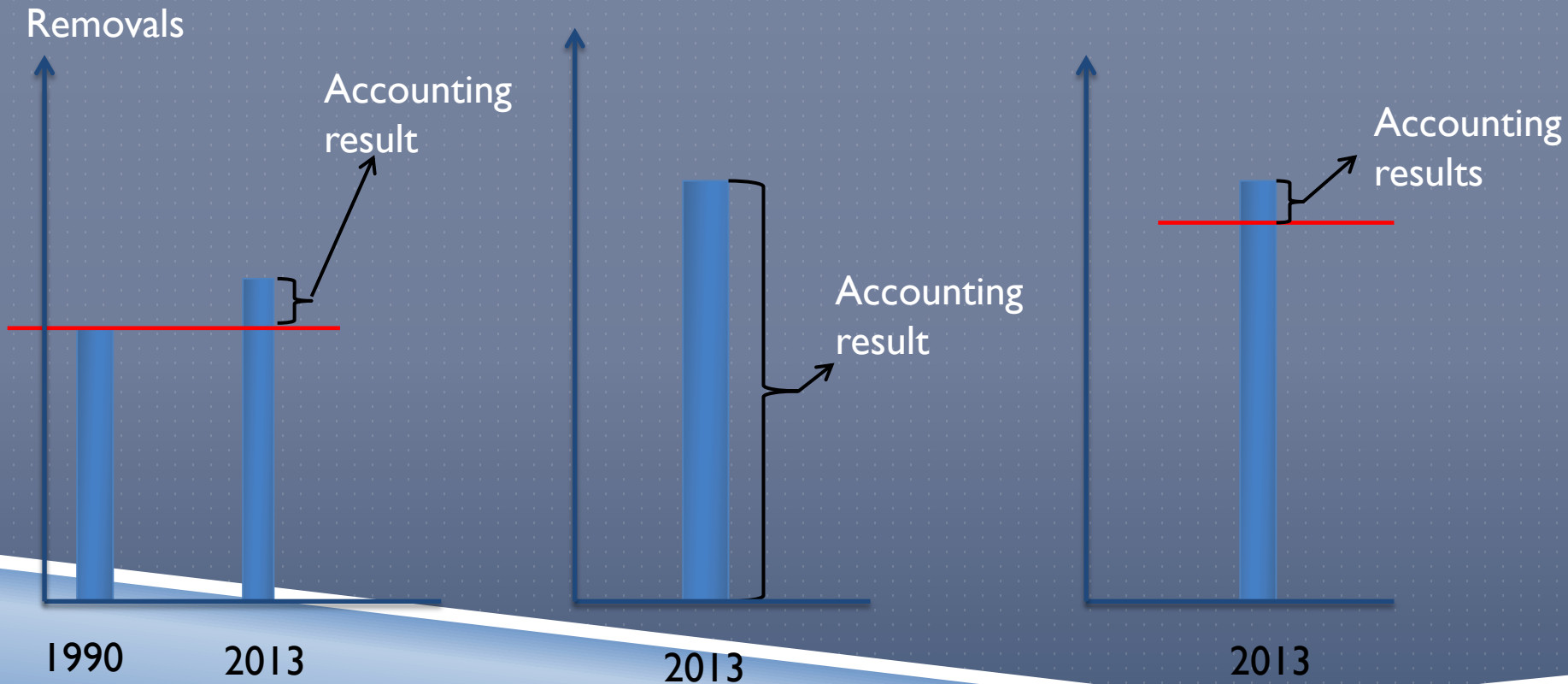
# LULUCF Accounting Approaches

net-net

gross-net

reference level

Removals



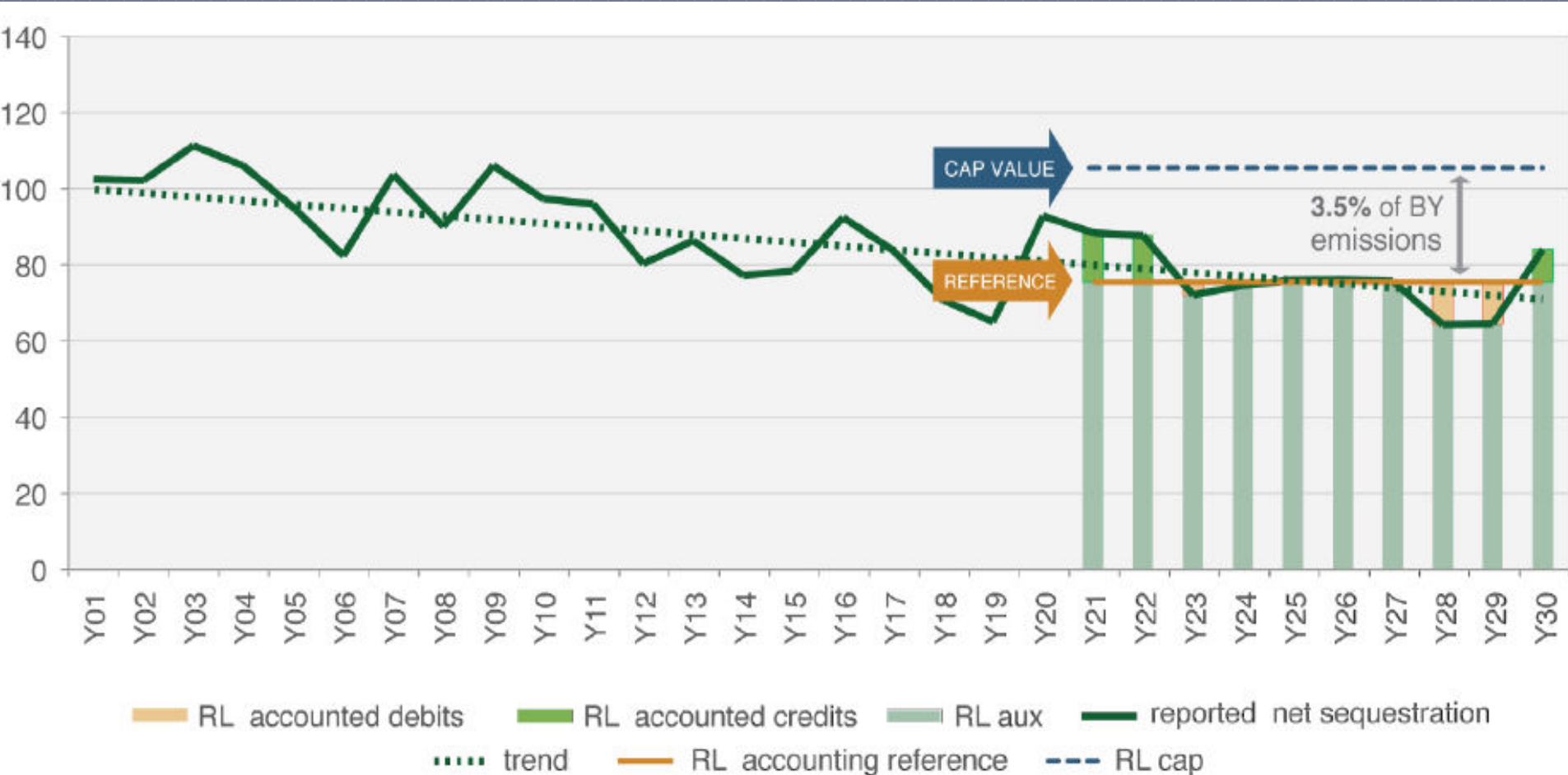
# WHY USE DIFFERENT APPROACHES?

1. Uncertainties over magnitude;
  2. Risks of disturbances beyond control;
  3. Possible significant contribution arising from pre-1990 (i.e. base year for most of the countries) activities and;
  4. The difficulties of dealing with long cyclic rotations of trees within commitment periods of only 5 and 8 years.
- ▶ Most of these characteristics are linked to forests and less to other land use

# GROSS-NET WITH A CAP NO INCENTIVE TO DO BETTER



# REFERENCE LEVEL AND A CAP OF 3,5 %



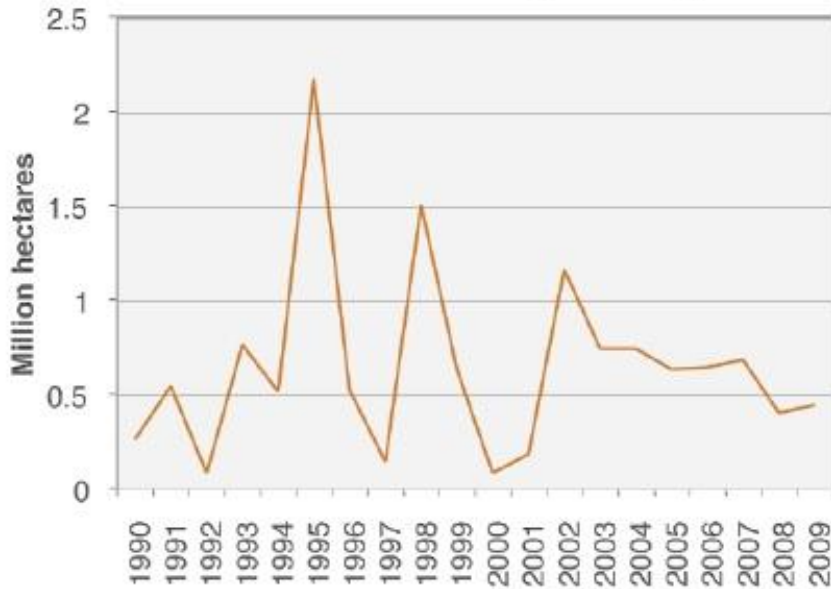
	Forest Management Reference Level	Forest Reference Emission Level/ Forest Reference Level
Objective	Accounting forest management under the Kyoto Protocol	Assess performance under REDD+
Units	Tonnes CO <sub>2eq</sub> per year	Tonnes CO <sub>2eq</sub> per year
Scale	National	National with subnational as an interim measure
Principles	<p>Information provided should be:</p> <ul style="list-style-type: none"> <li>• Transparent, complete, consistent, comparable and accurate</li> <li>• Allow a technical assessment of the data, methodologies and procedures used in the construction of FMRLs</li> <li>• Improved models and data can be used during the accounting period but will need to be accompanied by a technical correction to be added to the accounting</li> </ul>	<p>Information provided should be:</p> <ul style="list-style-type: none"> <li>• Transparent, complete, consistent and accurate</li> <li>• Allow a technical assessment of the data, methodologies and procedures used in the construction of REL/RLs</li> </ul> <p>Countries may use a step-wise approach to allow for improvements, e.g. incorporating better data, improved methodologies, or additional pools.</p> <p>REL/RLs should be updated periodically, taking into account new knowledge, new trends and any modification of scope and methodologies</p>

# NATURAL DISTURBANCES

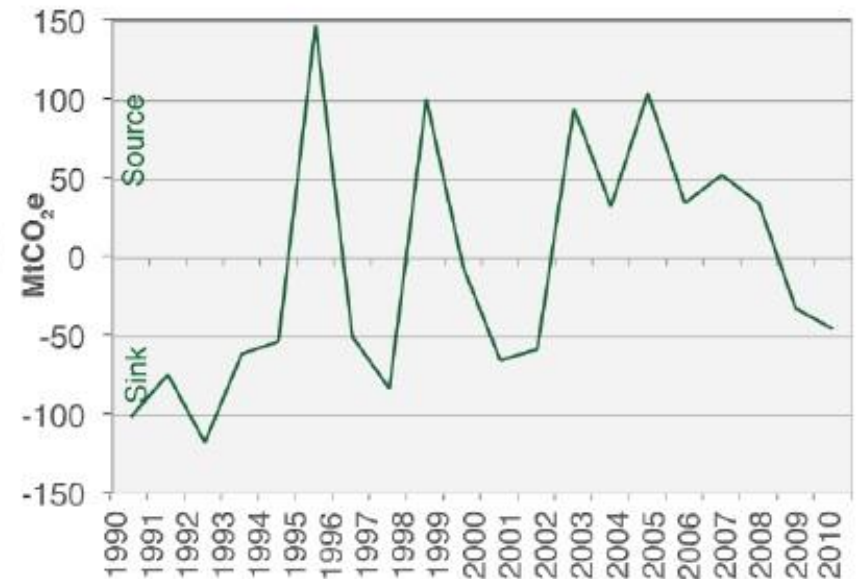


# THE EFFECT OF FIRES ON CANADA'S FOREST LAND REMAINING FOREST LAND EMISSIONS, 1990-2009

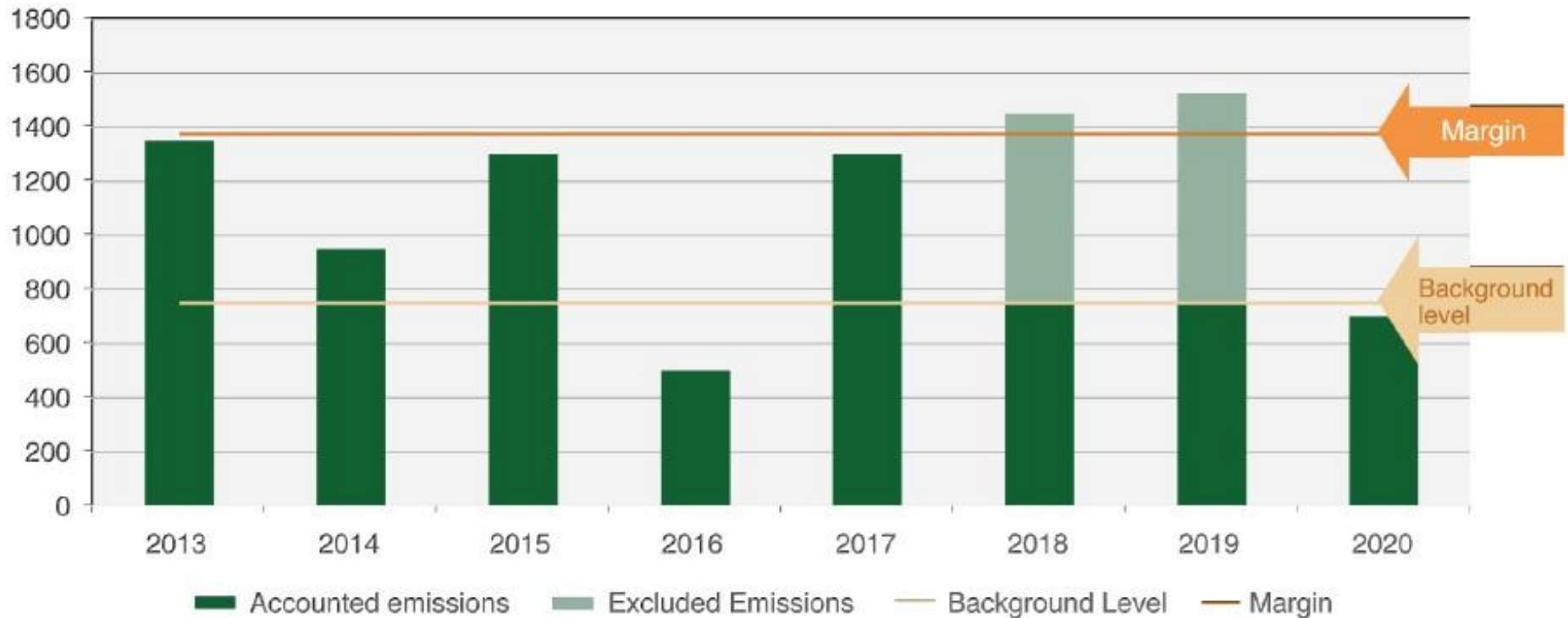
Canada: Area burned in managed forests, 1990-2009



Carbon emissions from forests, 1990-2010 (MtCO<sub>2</sub>e)



# APPLICATION OF THE NATURAL DISTURBANCE PROVISION



# HARVESTED WOOD PRODUCTS



# CARBON FLOW TO AND FROM THE HARVESTED WOOD PRODUCT POOL



# HARVESTED WOOD PRODUCTS ACCOUNTING

Approach	Explanation
Stock Change Approach	Include emissions from all wood <b>consumed</b> in the country (including imports)
Production Approach	Include emissions from all wood <b>produced</b> in the country (including exports)
Atmospheric-flow Approach	Similar to the stock change approach but different calculations
Simple Decay	Similar to the production approach but different calculations
Instantaneous oxidation	Oxidized in the year of removal

# DEFAULT HALF-LIVES AND DECAY RATES USED FOR THE KYOTO PROTOCOL

	<b>Half-life (years)</b>	<b>Decay rate (k)</b>
Paper	2	0.347
Wood panels	25	0.028
Sawn wood	35	0.020

An incentive to produce long-lived wood products

# CDM AND JI ACCOUNTING FOR LAND USE AND FORESTRY

# ACTIVITIES

The CDM has been limited to afforestation and reforestation. In order to implement such project under the CDM, a non-Annex I Party must have selected and reported to the CDM Executive Board the following:

- A single minimum tree crown cover value between 10 and 30 percent;
- A single minimum land area value between 0.05 and 1 hectare; and
- A single minimum tree height value between 2 and 5 meters.

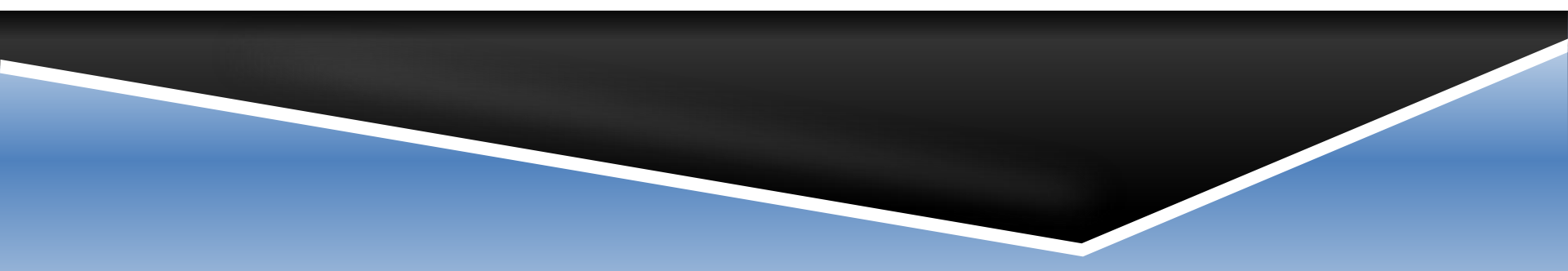
Jl can include any LULUCF activity under Articles 3.3 and 3.4 (i.e. afforestation, reforestation, forest management, cropland management, grazing land management, revegetation and wetland drainage & rewetting)

# PROJECTS TO DATE

At the time of writing there are only 53 registered A/R CDM project activities and 3 registered JI LULUCF project activities.

SBSTA is considering possible additional LULUCF activities under the CDM, with a view to forwarding a draft decision on such matter for consideration and adoption at CMP 10 (December 2014), although there has been minimal progress on this agenda item to date

# SOCIAL AND ENVIRONMENTAL SAFEGUARDS



# SOCIAL AND ENVIRONMENTAL PROVISIONS IN THE UNFCCC

Preamble: “Affirming that responses to climate change should be **coordinated with social and economic development** in an integrated manner with a view to **avoiding adverse impacts** on the latter, taking into account the legitimate priority needs of developing countries for the achievement of sustained economic growth and the eradication of poverty”.

Article 2, Objectives: “The ultimate objective... stabilization of GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to **allow ecosystems to adapt naturally** to climate change, to **ensure that food production is not threatened** and to **enable economic development to proceed in a sustainable manner.**”

# SOCIAL AND ENVIRONMENTAL PROVISIONS IN THE UNFCCC

Article 4, Commitments: “All parties... Take climate change considerations into account, to the extent feasible, in their relevant social, economic and environmental policies and actions, and **employ appropriate methods, for example impact assessments**, formulated and determined nationally, **with a view to minimizing adverse effects on the economy, on public health and on the quality of the environment**, of projects or measures undertaken by them to mitigate or adapt to climate change”

# REDD+ SAFEGUARDS

- a) Consistency with the objectives of national forest programs and with relevant international conventions and agreements;
- b) Transparent and effective national forest governance structures;
- c) Respect for the knowledge and rights of indigenous peoples and members of local communities;
- d) Full and effective participation of relevant stakeholders;
- e) Consistency with the conservation of natural forests and biological diversity and enhancing social and environmental benefits;
- f) Addressing the risks of reversals;
- g) Reducing displacement of emissions.

# THE FUTURE OF LAND USE IN THE UNFCCC

# AD HOC WORKING GROUP ON THE DURBAN PLATFORM FOR ENHANCED ACTION (ADP)

- ▶ Decision 1/CP.17 (Durban): ADP shall complete its work ... no later than 2015 (COP 21 - Paris) in order to adopt a **protocol, another legal instrument or an agreed outcome with legal force, applicable to all**, to come into effect and be implemented from 2020
- ▶ Role of land use in the **INDC** (Intended nationally determined contributions)?

# QUESTIONS

- ▶ Please submit questions in writing using the IM function. Send messages to @All
- ▶ A recording of today's webinar will be available at <http://ghginstitute.org> shortly. A link will also be emailed to registered participants.
- ▶ The GHGMI webpage will contain an interactive comments section if you would like to continue the discussion or ask questions of the presenters.
- ▶ For additional questions please email us directly:
  - ▶ Marcelo Rocha: [marcelo.trocha@fabricaethica.com.br](mailto:marcelo.trocha@fabricaethica.com.br)
  - ▶ Peter Iversen: [peteraai@yahoo.dk](mailto:peteraai@yahoo.dk)
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