

# Forest Management: Getting the Accounting Right

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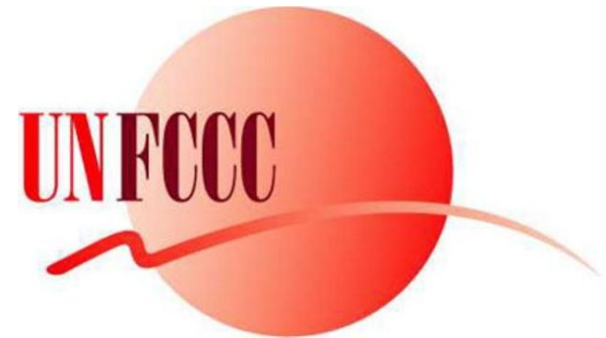
July 30, 2010



# The goal: Prevent dangerous climate change

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- "The ultimate objective of this Convention ... is to achieve... stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent **dangerous anthropogenic interference with the climate system.**"
- **Time is running out**
  - 2010 warmest spring on record
  - Every month since February 1985 has been above average temperature (for the 20th century)
  - Global emissions must peak by 2015 and decline by 80% by 2050



# Annex I forests important to global mitigation efforts

- **>700,000 Mt carbon** reservoir in Boreal and Temperate forests
- Global anthropogenic GHG emissions: **45,000 Mt CO<sub>2</sub>e/yr**
- Reductions under KP in the first commitment period: **~600 Mt CO<sub>2</sub>e/yr**
- Annex I forest-based mitigation potential: **700-1,600 Mt CO<sub>2</sub>e/yr** in 2040

Global Carbon Stocks	Mt C
Boreal forests	559,000
Temperate forests	159,000
Temperate grasslands	304,000
Wetlands	349,000**
Tropical forests	428,000

Source: IPCC AR4, Ch 9; \*\*Joosten, 2009

# Why do we need ambition from LULUCF?

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- Stabilization scenarios show that a minimum of 25-40% emission reduction is required from AI Parties
- “Annex I Parties commit to implement individually or jointly the **quantified economy wide** emissions targets for 2020...”
  - Copenhagen Accord (also Kyoto Protocol, Bali Action Plan)

*Any increase in net LULUCF emissions will undermine Parties' efforts to meet these commitments*

# What can management activities contribute to mitigation?

- Forest Area: maintain or increase
- Stand-level Carbon Density: maintain or increase by reducing forest degradation and improving management
- Landscape Carbon Density: maintain or increase through forest conservation
- Off-site Carbon Stocks: enhance material and bioenergy substitution
  - Bioenergy: 0.4 – 4 Gt CO<sub>2</sub>e/yr



# Under current forecasts and proposed accounting, Annex I (AI) forests fall short of their potential

- At the time when past commitments were made, management of AI forests created a large aggregate sink
- AI Parties relied on this sink to meet their first commitment period (CP1) targets
- Projections call for **large increases in emissions** due to rising demand for bioenergy + wood products
- Proposed accounting rules would allow these emissions to go unaccounted



*The effect is to violate the commitments of the past and allow new emissions without penalty*

# Commitments to protect and enhance sinks and reservoirs

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## 1992: UNFCCC Article 4.1(d)

“All Parties... shall ... [p]romote sustainable management, and promote and cooperate in the **conservation and enhancement, as appropriate, of sinks and reservoirs** of all greenhouse gases not controlled by the Montreal Protocol, including biomass, forests and oceans as well as other terrestrial, coastal and marine ecosystems ....”

## 1997: Kyoto Protocol Article 2.1(a)(ii)

“1. Each Party included in Annex I, in achieving its quantified emission limitation ... shall ... [i]mplement and/or further elaborate policies and measures ... such as ... **[p]rotection and enhancement of sinks and reservoirs of greenhouse gases** ...; promotion of sustainable forest management practices, afforestation and reforestation ....”

# Commitments to not undermine ambition with LULUCF

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## **2005:** Decision 16/CMP.1 Paragraph 1

“... the following principles govern the treatment of land use, land-use change and forestry activities:

**(c) That the aim stated in Article 3, paragraph 1, of the Kyoto Protocol not be changed by accounting for land use, land-use change and forestry activities ....”**

## **KP Article 3.1:**

“The Parties included in Annex I shall ... ensure that their aggregate anthropogenic carbon dioxide equivalent emissions of the greenhouse gases ... do not exceed their assigned amounts ... **with a view to reducing their overall emissions of such gases ....”**



# Commitment to deep reductions

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## **2009:** Copenhagen Accord Paragraph 2

“... deep cuts in global emissions are required ... to reduce global emissions so as to hold the increase in global temperature below 2 degrees Celsius.... We should cooperate in achieving the peaking of global and national emissions as soon as possible...”

# LULUCF should “strengthen” ambition

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- 20 (a) “... in particular how **the rules on mechanisms and LULUCF could strengthen the level of ambition of Annex I Parties**, and also how these rules could constitute an incentive for domestic action by Annex I Parties...”



*Scenario Note from the Chair of the AWG-KP*

August 2010

# The solution: Integrity and ambition

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- **Part 1: Create a system with accounting integrity**
  - Deliver accurate and detailed accounting
  - Incentivize genuine mitigation
- **Part 2: Select targets and plan activities that show ambition to reduce emissions**
  - Protect and enhance sinks and reservoirs
  - Fully account for emissions from bioenergy

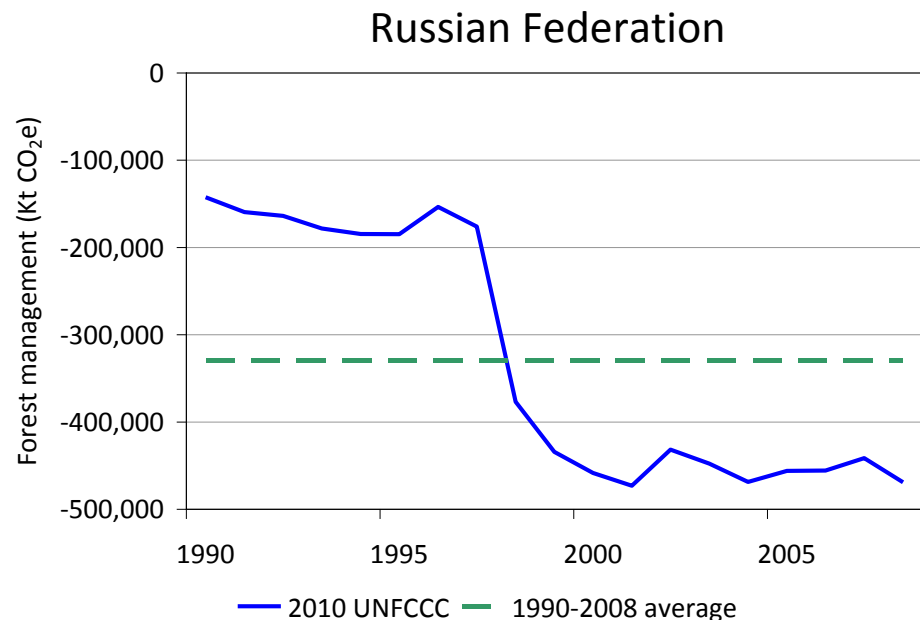
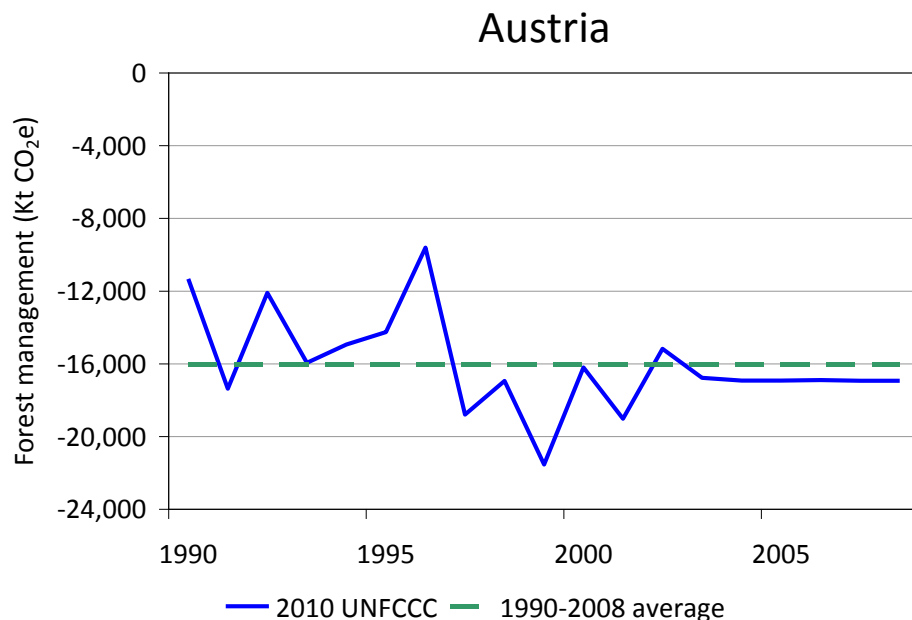
# An accounting system with integrity is a precursor to ambition

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- A projected reference level is **designed to measure deviation from planned growth**, and does not accurately reflect changes in emissions relative to the current state of the atmosphere
- Deviation from planned growth is for Non-AI mitigation, where projected growth in emissions is envisioned as part of sustainable development
- **LULUCF rules will undermine economy-wide ambition if they fail to account for increasing emissions from forest management relative to historic levels**
- Failure to account for increasing emissions could lead to devaluation of AAUs

# Why isn't a single base year the best measure of increased net emissions?

- A single base year is not necessarily representative of the sector's past emissions
  - Interannual variability
  - Multi-year trends



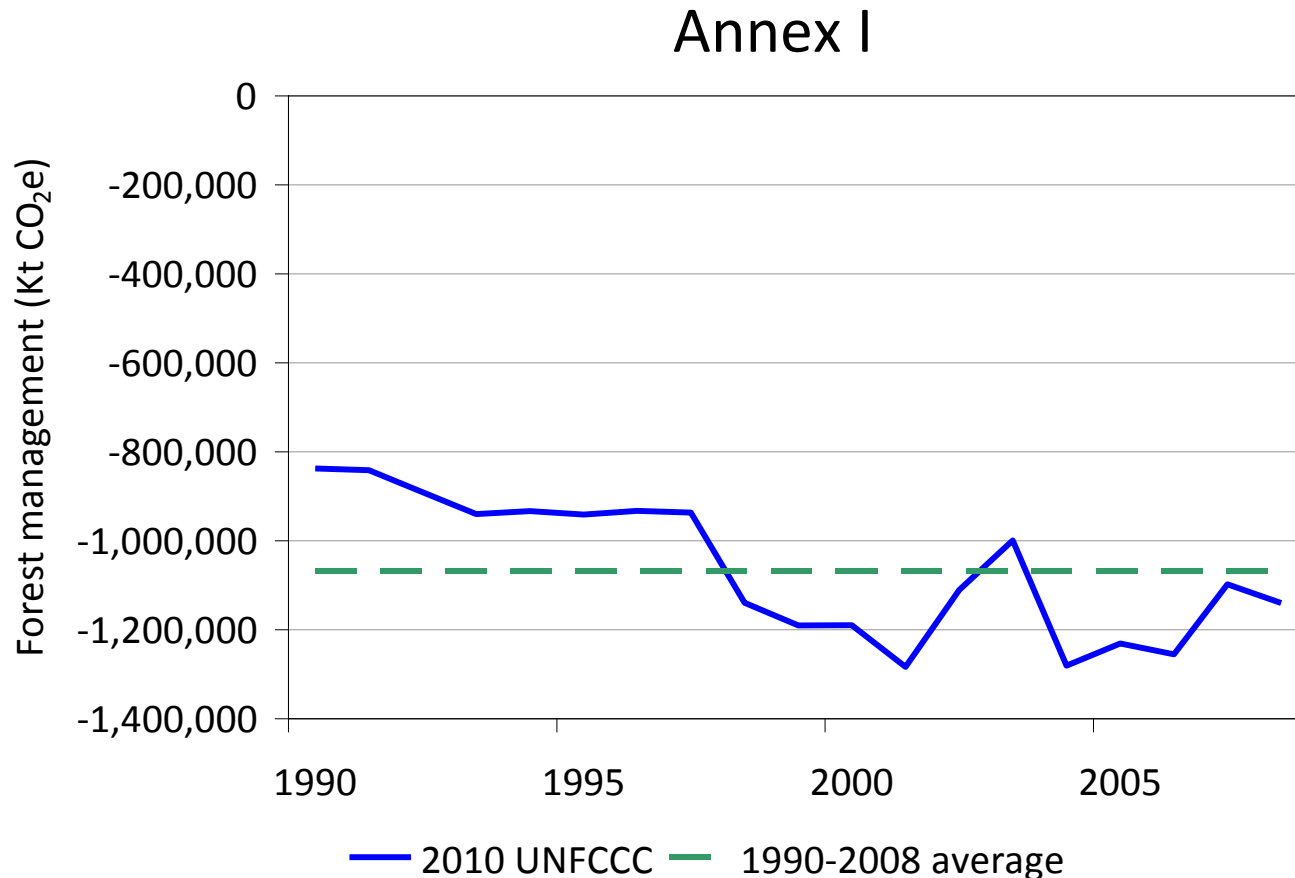
# A long-term average is the best approach to measure changes in net emissions

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- Advantages of a long-term historical average:
  - Allows better characterization of uncertainty
  - Smooths effects of economic cycles or transitions
  - Evens out effects of interannual variability
  - Minimizes winners and losers – everyone treated equally
  - No opportunity for choosing convenient years to maximize credits
  - **Best reflection of historical impacts on the atmosphere**

# Our proposal for a reference level

- The best baseline to capture net changes in emissions is a long-term historical average from 1990-2008



# Parties' Proposed Reference Levels (PRLs)

Reference Level	Countries	Account for growth in emissions?
Long-term average historical	0	
Base period: 2001 - 2005	Switzerland	
Base year 1990	Norway, Russia	
Zero sink	Japan	
Projected reference levels	<u>36 Parties</u>	



# PRLs allow emissions increases to go unaccounted

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- Many AI Parties resist a historical average as a reference level, using the argument that they need to remove the effects of age class structure and natural disturbances
- However, many Parties have submitted reference levels and documents that include policies to increase harvest rates and net emissions from LULUCF

***This indicates that the Proposed Reference Level is not an effective mechanism for guaranteeing accounting integrity and ambition***

# AI Parties are failing to conserve and enhance sinks and reservoirs

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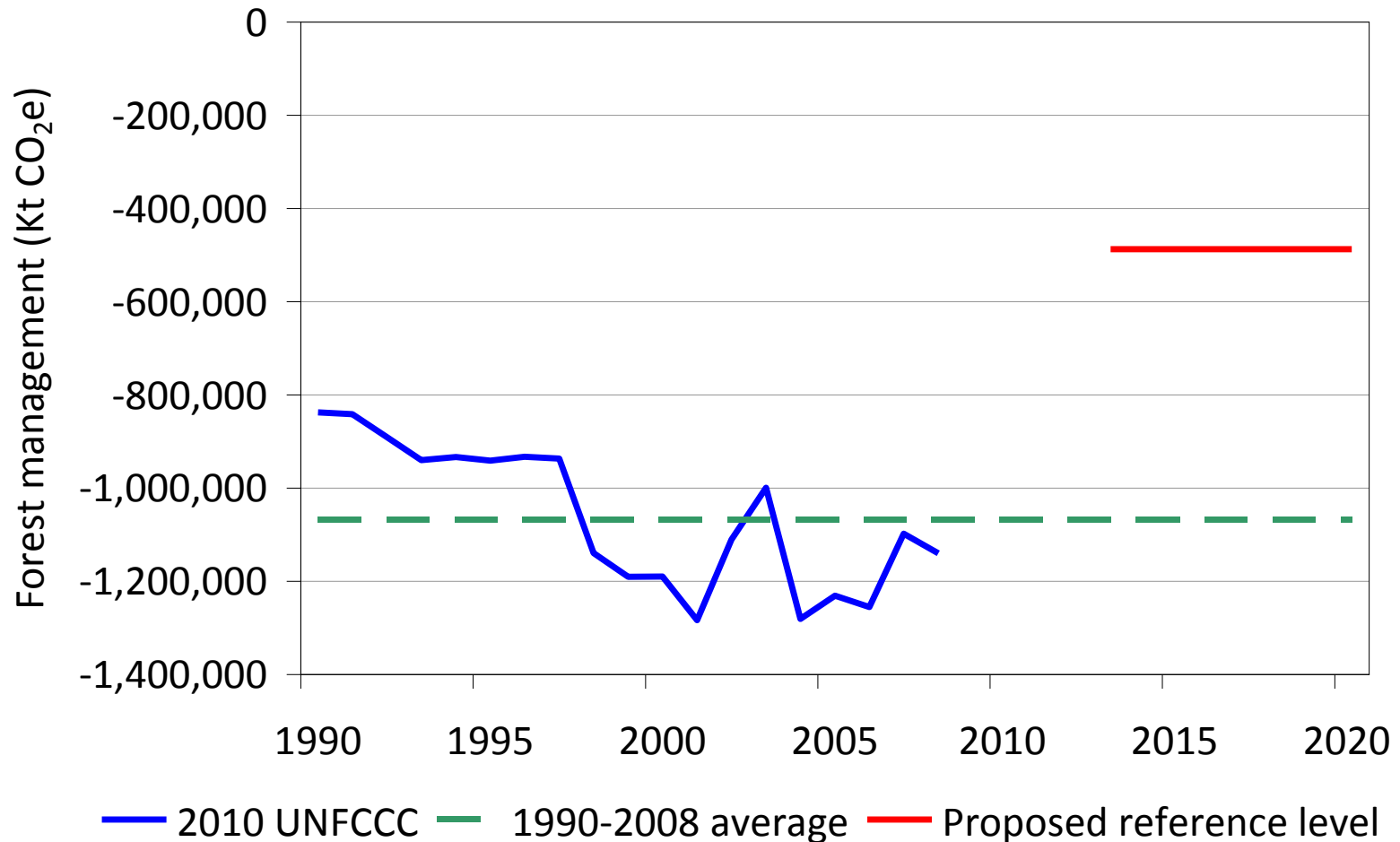
- PRLs do not incentivize activities to reduce forest emissions using mitigation activities identified by IPCC
- **Parties are demonstrating the intention to increase harvest rates and emissions from forest management**
  - These emissions would not be reflected in accounts using the PRL mechanism

Parties proposing increased harvest rates:

- Australia
- EU27
- Japan
- New Zealand
- Norway
- Russian Federation
- Switzerland

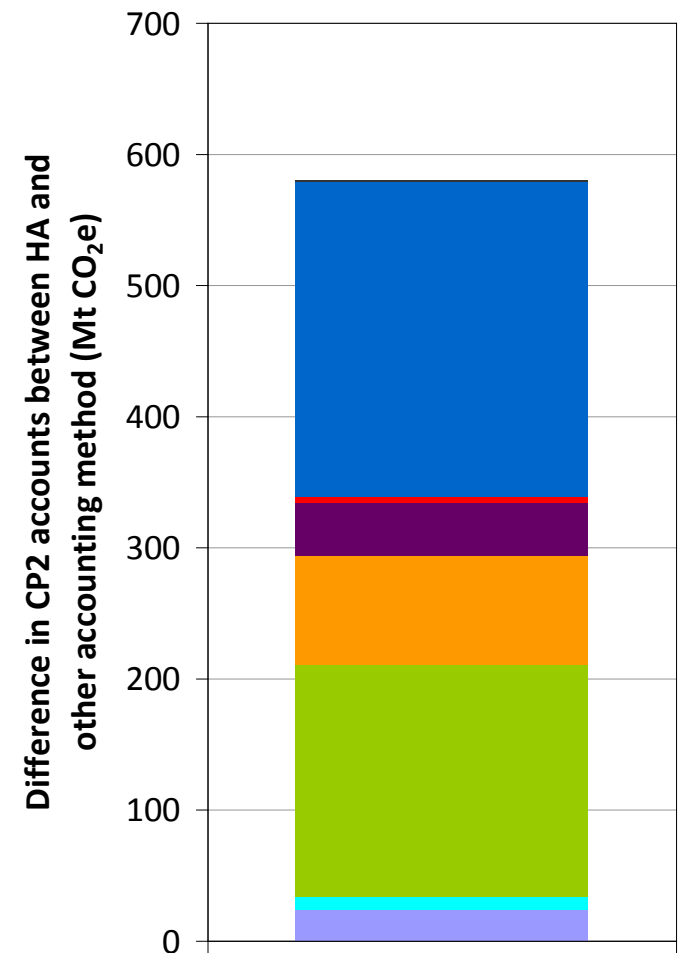
# What change will the atmosphere see?

## Annex I



# How big is the accounting gap?

- 580 Mt CO<sub>2</sub>e:
  - 251 Mt from using projected reference levels
  - 245 Mt from using 1990 base year
  - 83 Mt from using zero sink
  - 1 Mt from using 2001-2005 base year
- PRLs compared to the historical average 1990-2008
- We assume Parties realize their own forecasts for CP2



Australia

Canada

EU27

Japan

PRLs

New Zealand

Norway

Russian Federation

Switzerland

# What are the accounting options and what are their impacts?

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1. Proposed Reference Levels
2. Historical average
3. Current rules
4. 3% cap on credits from Proposed Reference Level
5. 85% discount on CP2 forecasts
6. 2012 base year
7. 1990 Base year
8. 'Enhanced' reference levels – close accounting gap by 50%

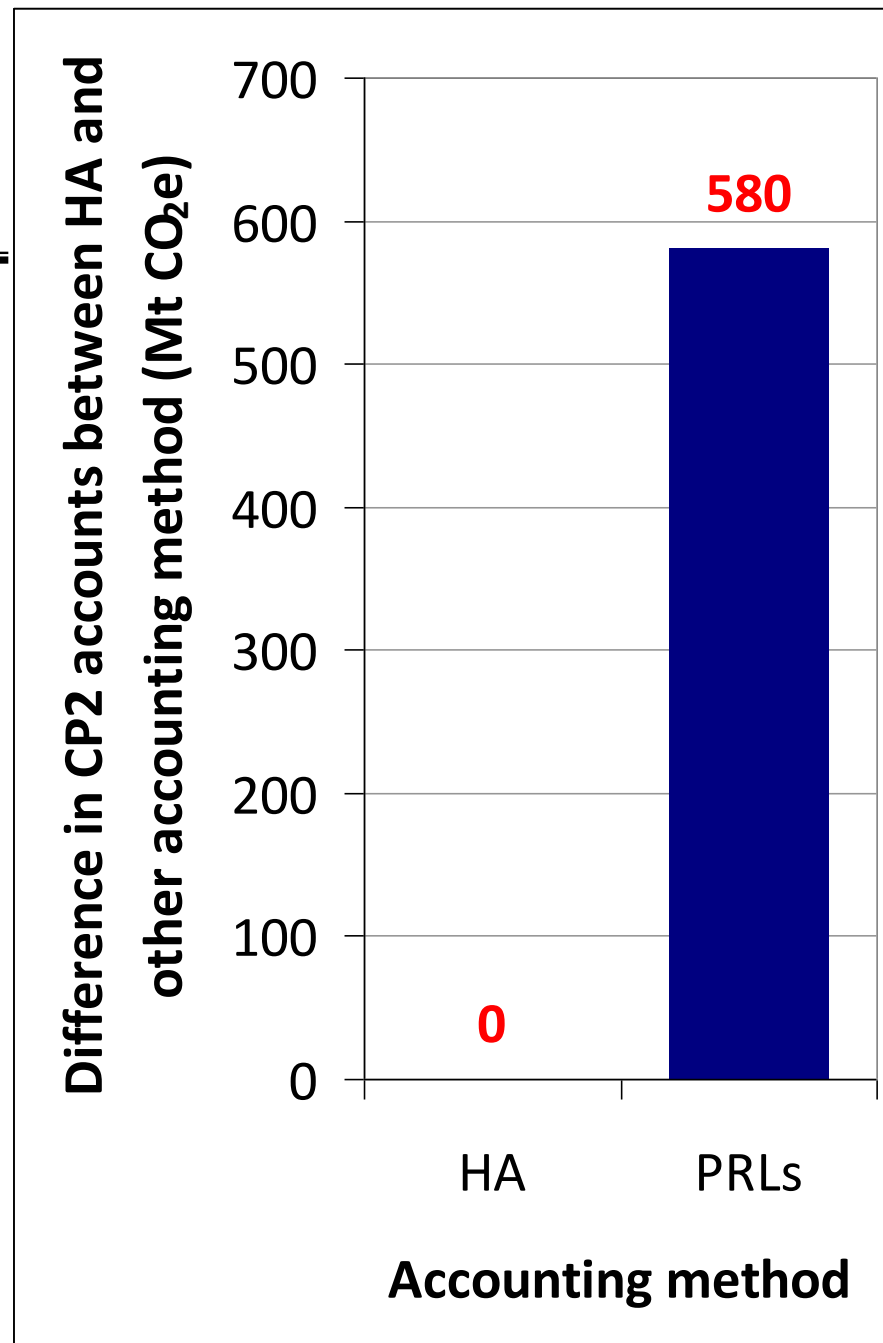
# Historical Average

## Pros

- Accounts for all increases emissions
- Preserves marginal incentives for abatement in the sector
- Robustly translates to REDD
- Smooths out annual variability

## Cons

- “Optics” of QELROs



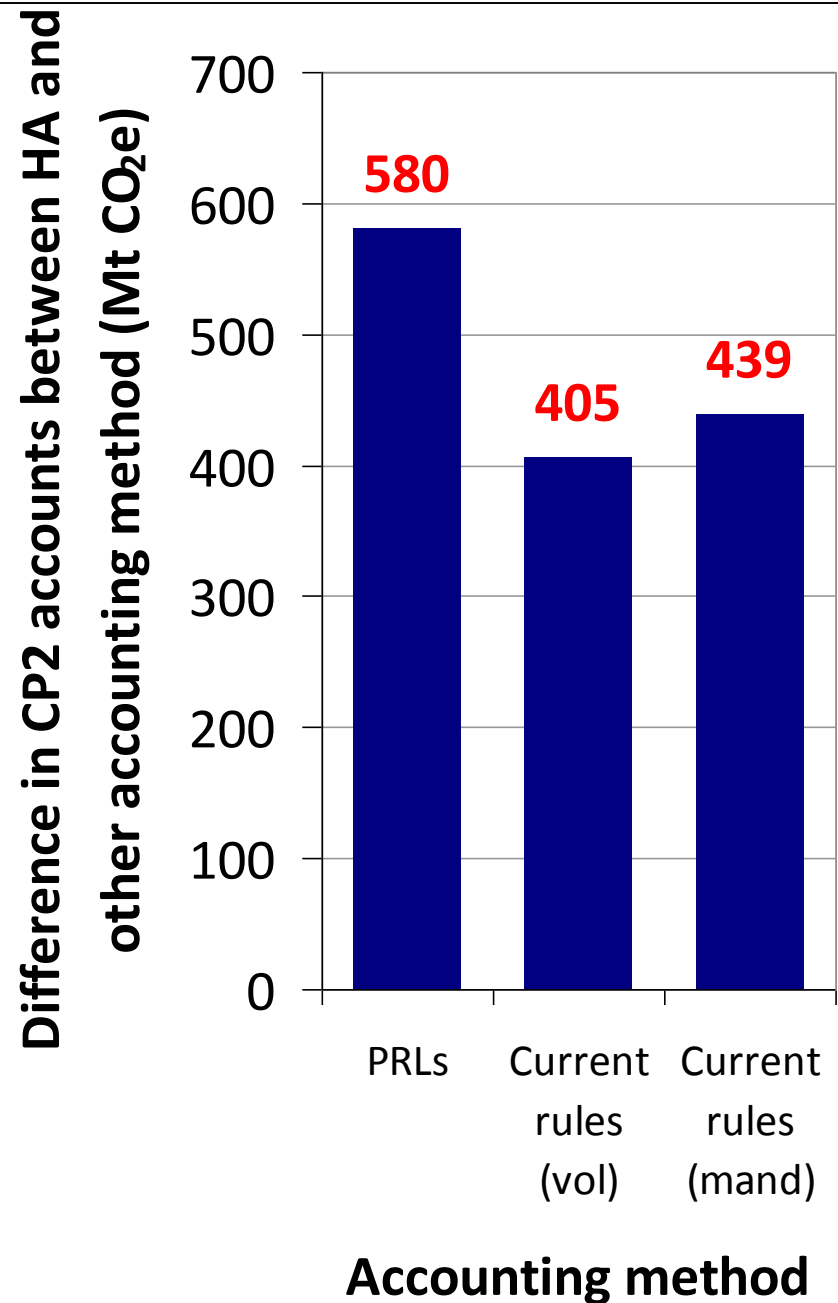
# Current Rules

## Pros

- Accounts for an estimated 175 Mt more than PRLs
- Provides some certainty, which countries can use to shape domestic incentives

## Cons

- Locks in rules with no added ambition or integrity
- About 405 Mt (439 Mt) still unaccounted
- Preserves voluntary framework that lets Parties increase emissions without penalty



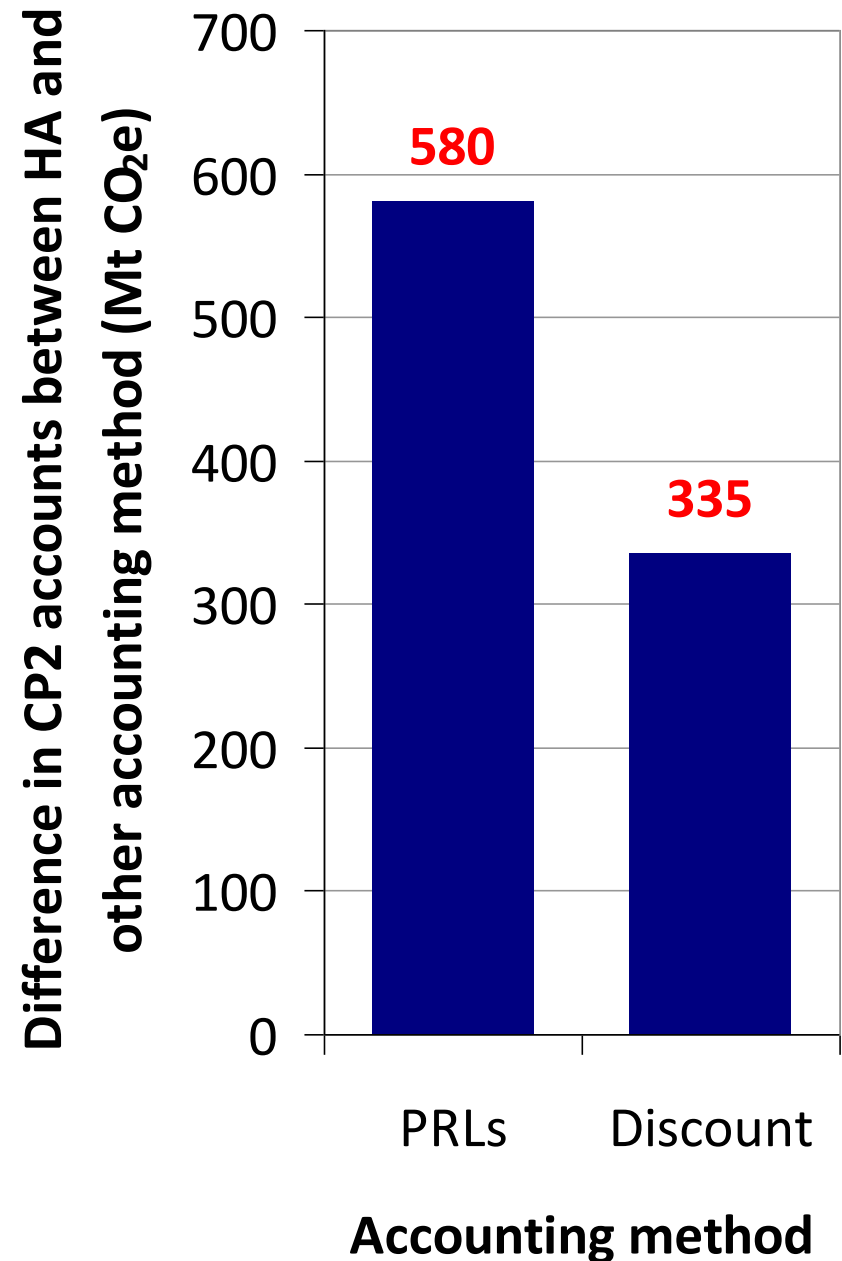
# Discounting

## Pros

- Accounts for an estimated 245 Mt more than PRLs
- Provides some certainty, which countries can use to shape domestic incentives

## Cons

- Reduces marginal incentives for abatement
- About 335 Mt still unaccounted
- Creates fungibility problems for trading and internal accounting





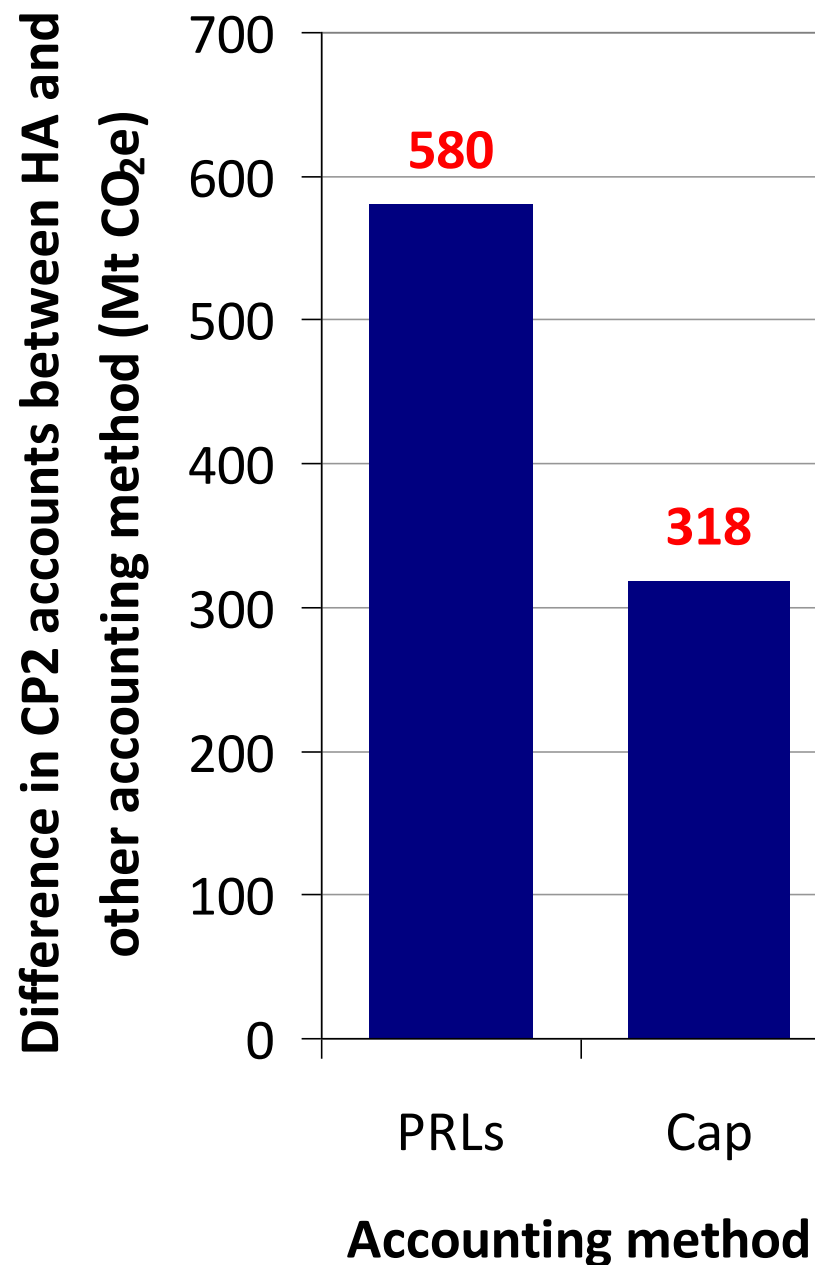
# PRLs with 3% cap

## Pros

- Accounts for an estimated 260 Mt more than PRLs
- Provides some certainty, which countries can use to shape domestic incentives

## Cons

- Limits marginal incentives for abatement
- About 320 Mt still unaccounted
- Does not address accountability for increasing emissions



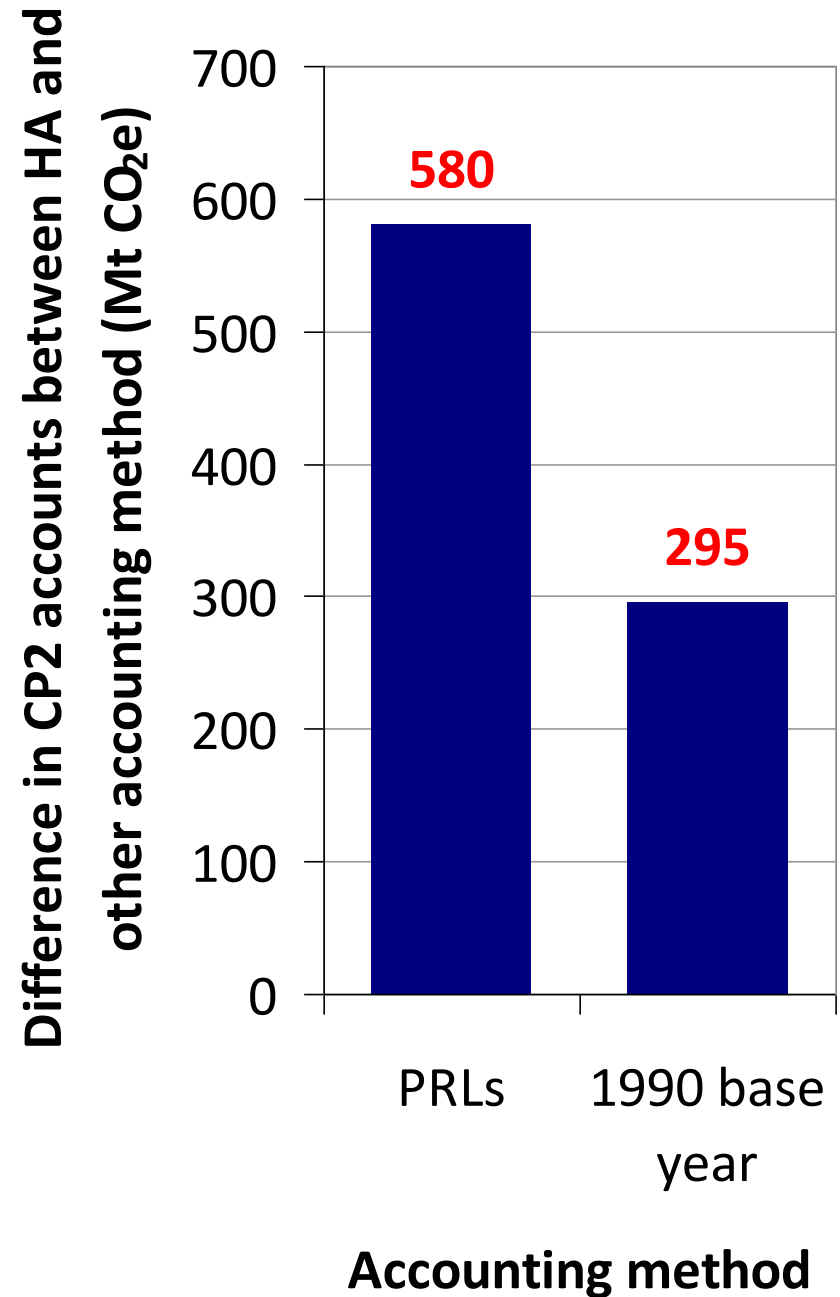
# 1990 Base Year

## Pros

- Accounts for an estimated 295 Mt more than PRLs
- Refers to an uncontested reference year
- Allows comparability of effort with CP1
- Accords with pledges for majority of AI Parties
- Anchors LULUCF within existing overall Kyoto framework

## Cons

- Fails to incorporate changes from the past 20 years
- About 295 Mt still unaccounted



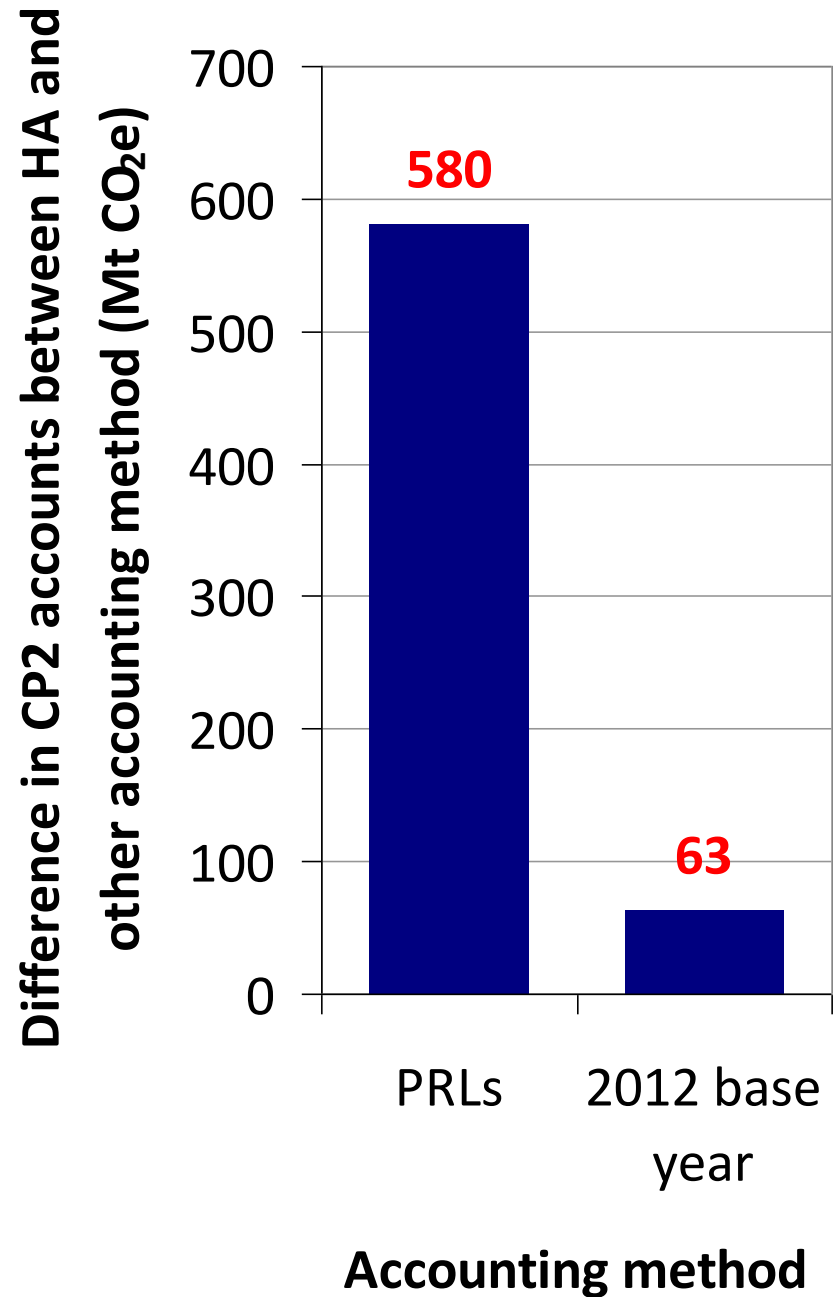
# 2012 Base Year

## Pros

- Accounts for an estimated 520 Mt more than PRLs
- More accurately captures changes in forests since 1990

## Cons

- Could create an incentive to emit before 2012
- About 63 Mt still unaccounted
- Would disproportionately penalize a few countries
- Methodological difficulty in setting economy-wide targets



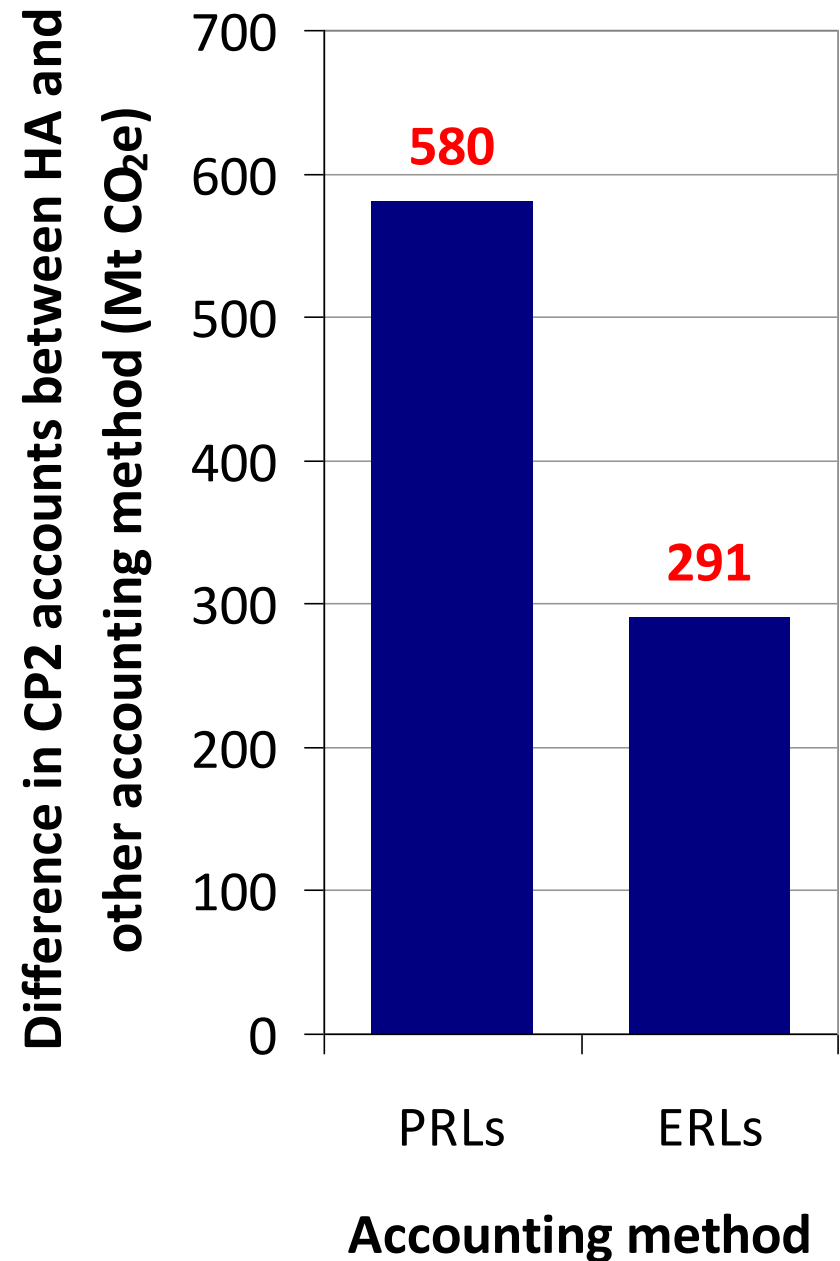
# 'Enhanced' Reference Levels

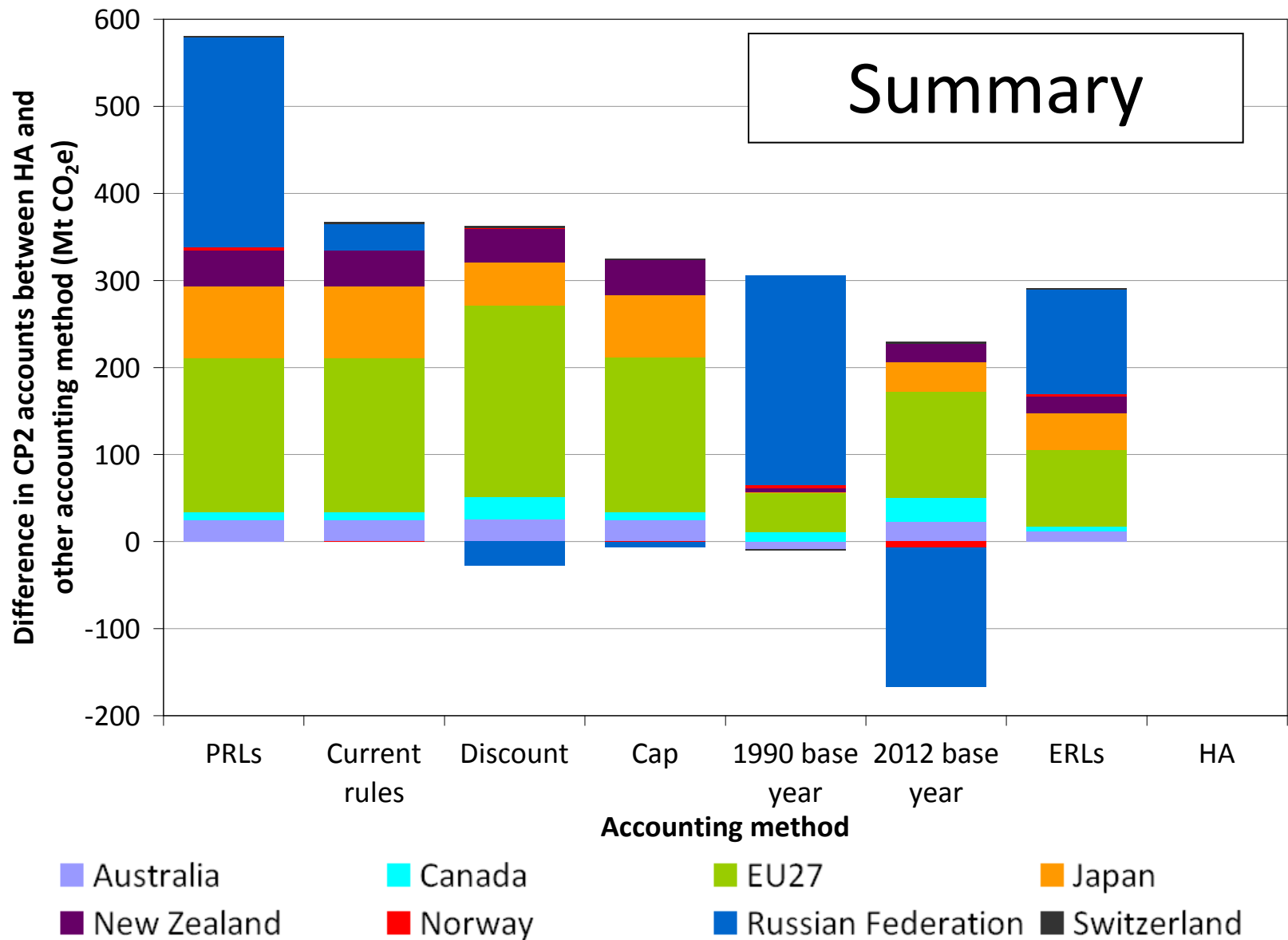
## Pros

- Accounts for an estimated 290 Mt more than PRLs
- Demonstrates ambition to take action in the sector

## Cons

- Fails to improve integrity of accounting system
- About 290 Mt still unaccounted
- Depends upon countries to accept responsibility





Difference between accounting in the second commitment period using the 1990-2008 reference period and alternative accounting methods, assuming that Parties achieve their forecasted emissions and removals.

# Result: Proposed Reference Levels Create Largest Accounting Gap

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- Historical average is the best reflection of changes in emissions to the atmosphere
- All other alternatives create an accounting 'gap'
- Gap is largest for PRLs
- Accounting gap from PRLs would be reduced if historical harvest levels were used instead of projected increases

# Effects of Alternatives to PRLs Vary

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- Most alternatives have biggest impact on Russia
- Base year 1990 has biggest impact on EU
- Only Enhanced Reference Levels affect everyone equally
- Base Year 2012 second smallest gap, but this compares forecasts to forecasts (highly uncertain)

## Other Important LULUCF Issues

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- Mandatory/Voluntary Accounting
- New Activities (e.g. wetland management)
- Harvested wood products
- Force majeure
- Moving to fuller accounting
- Safeguards to protect reservoirs in natural ecosystems

***We must resolve the reference level issue so that we can address these other important factors***



**Thank you!**

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