

Forest Management: Getting the Accounting Right

Prepared and presented by
CAN International
LULUCF Working Group

Quantitative Analysis by
Environmental Defense Fund
and Woods Hole Research Center

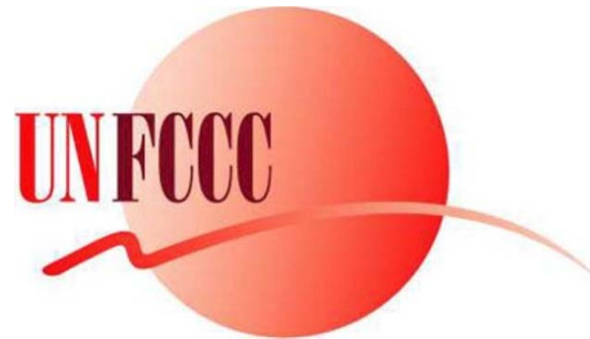
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The goal: Prevent dangerous climate change

- "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 CO₂e/yr**
- Reductions under KP in the first commitment period: **~600 Mt CO₂e/yr**
- Annex I forest-based mitigation potential: **700-1,600 Mt CO₂e/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; ** Represents total A1 wetlands, Joosten, 2009:

Why do we need ambition from LULUCF?

- 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 CO₂e/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

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

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

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

- 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

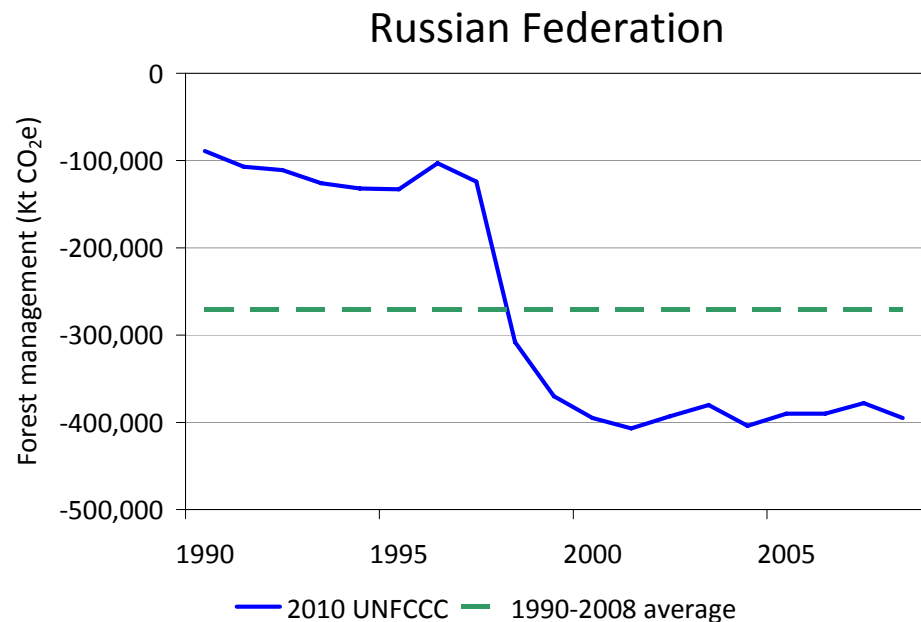
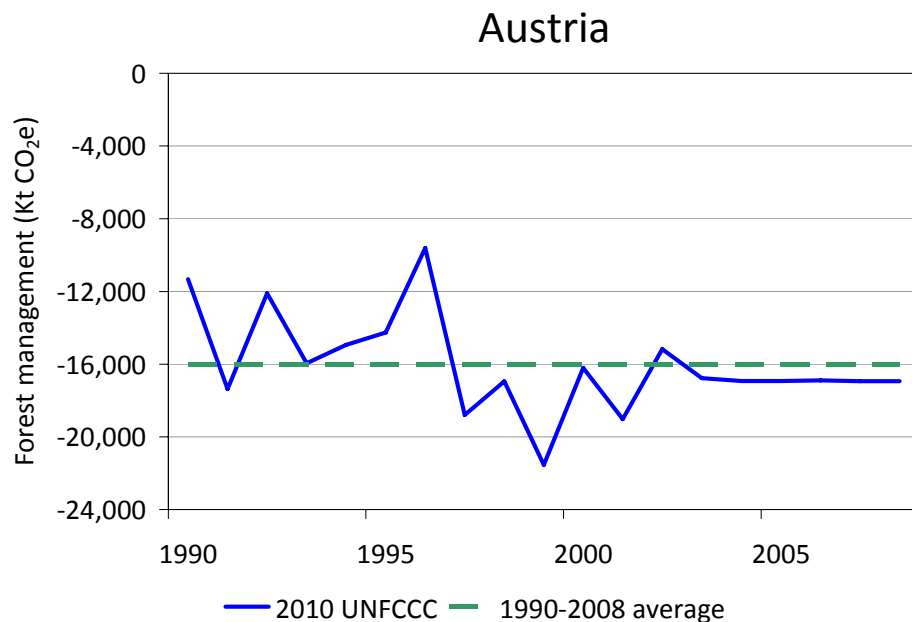
- **Part 1: Create a system with accounting integrity**
 - Deliver accurate and detailed accounting
 - Incentivize genuine mitigation
- **Part 2: Select targets and plan activities that show ambition to reduce emissions**
 - Protect and enhance sinks and reservoirs
 - Fully account for emissions from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

An accounting system with integrity is a precursor to ambition

- 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



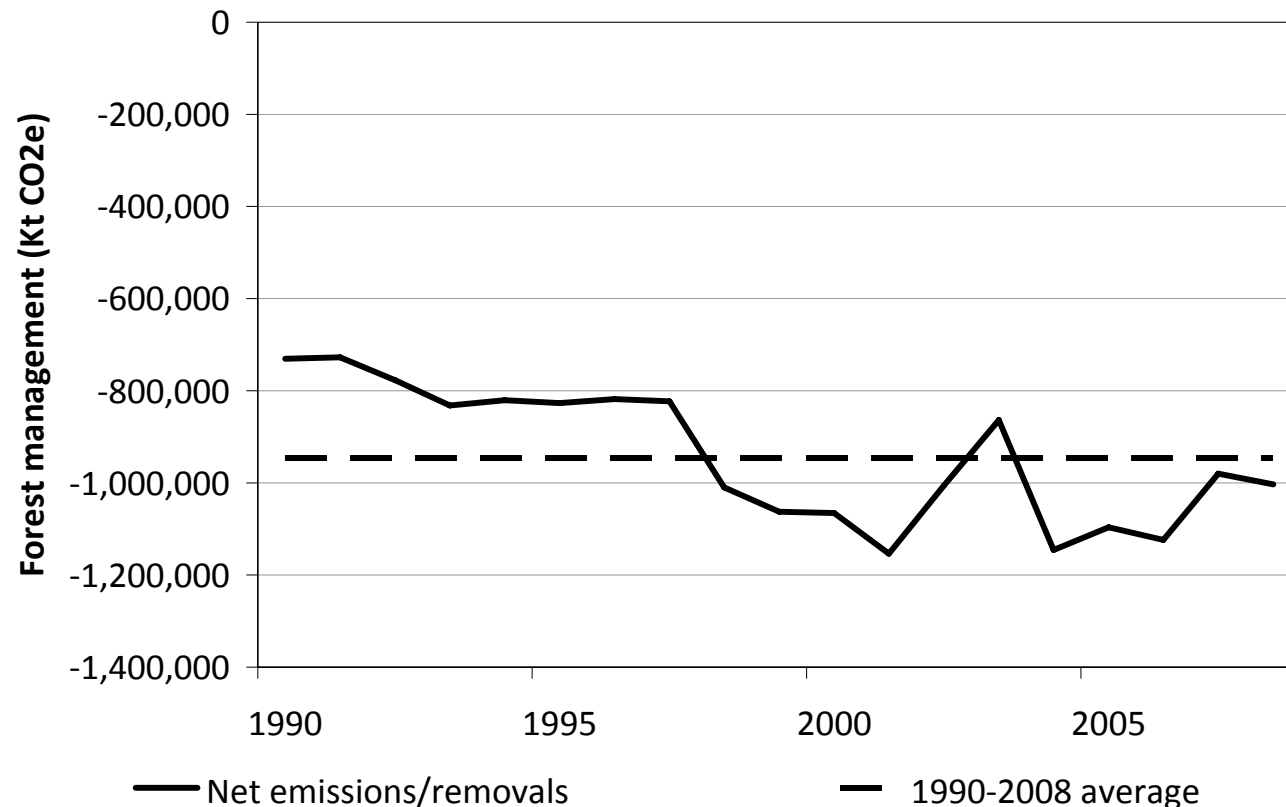
A long-term average is the best approach to measure changes in net emissions

- 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

Annex I



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

- 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

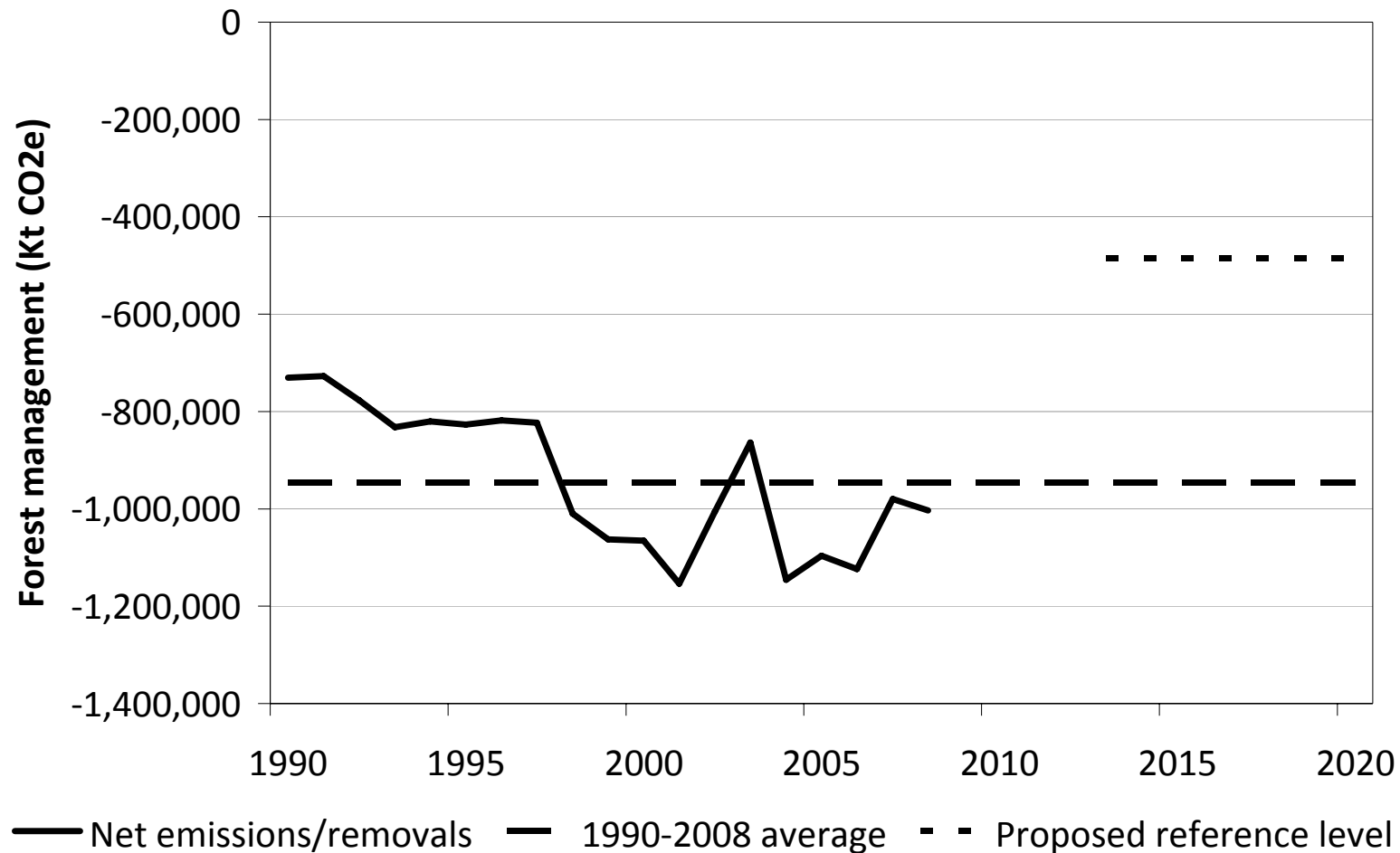
- PRLs do not incentivize activities to reduce forest emissions using mitigation activities identified by IPCC
- **Parties are demonstrating the intention to increase harvest rates and emissions from forest management**
 - These emissions would not be reflected in accounts using the PRL mechanism

Parties proposing increased harvest rates:

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

What change will the atmosphere see?

Annex I

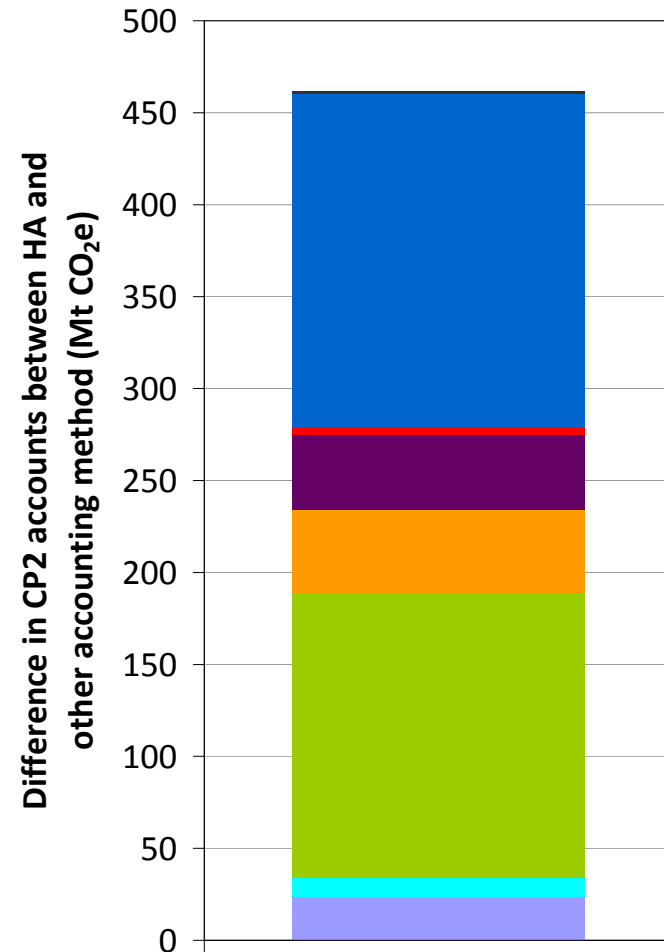


What are the accounting options and what are their impacts?

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%

How big is the accounting gap?

- 461 Mt CO₂e:
 - 230 Mt from using projected reference levels
 - 185 Mt from using 1990 base year
 - 45 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



PRLs

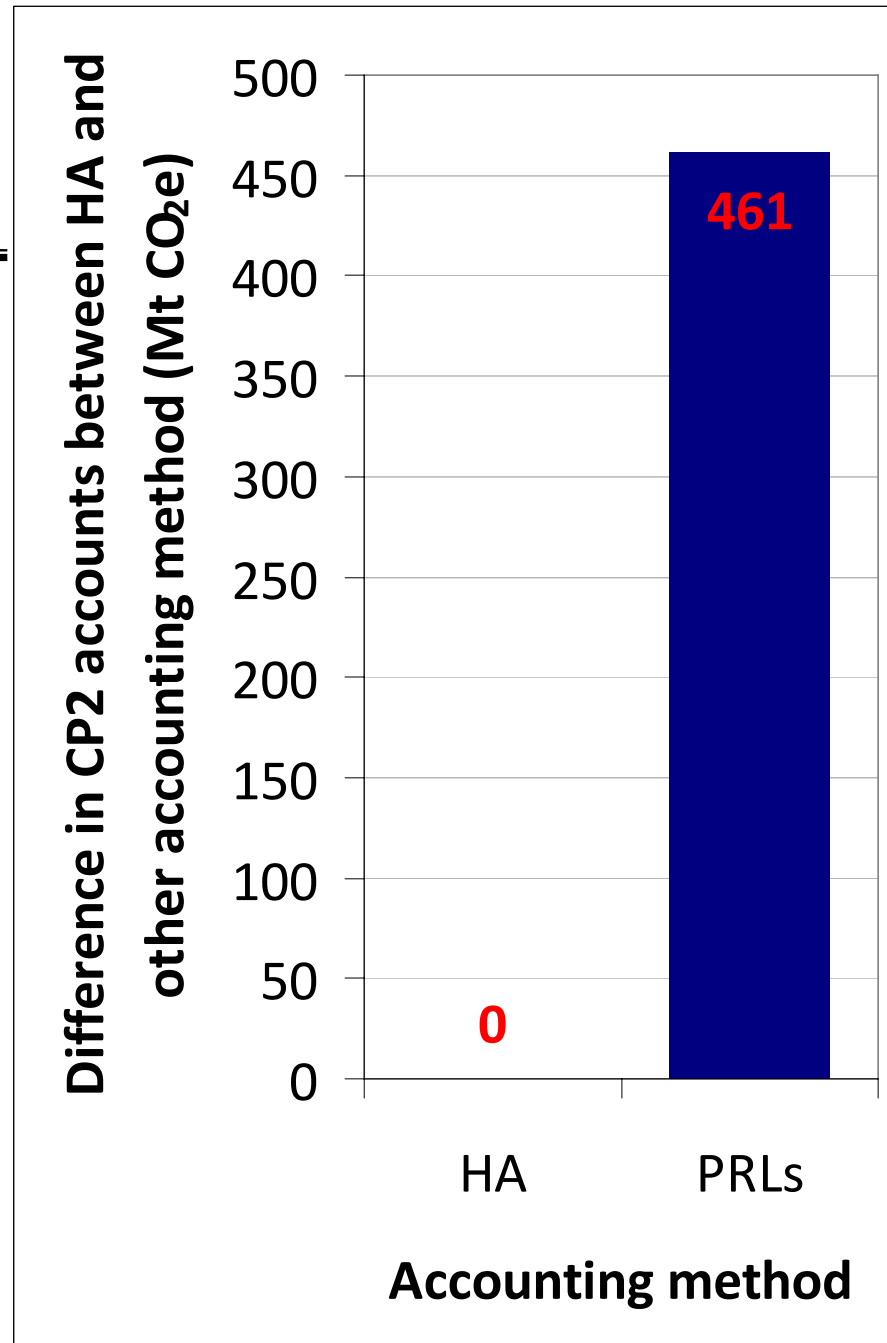
Historical Average

Pros

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

Cons

- “Optics” of QELROs



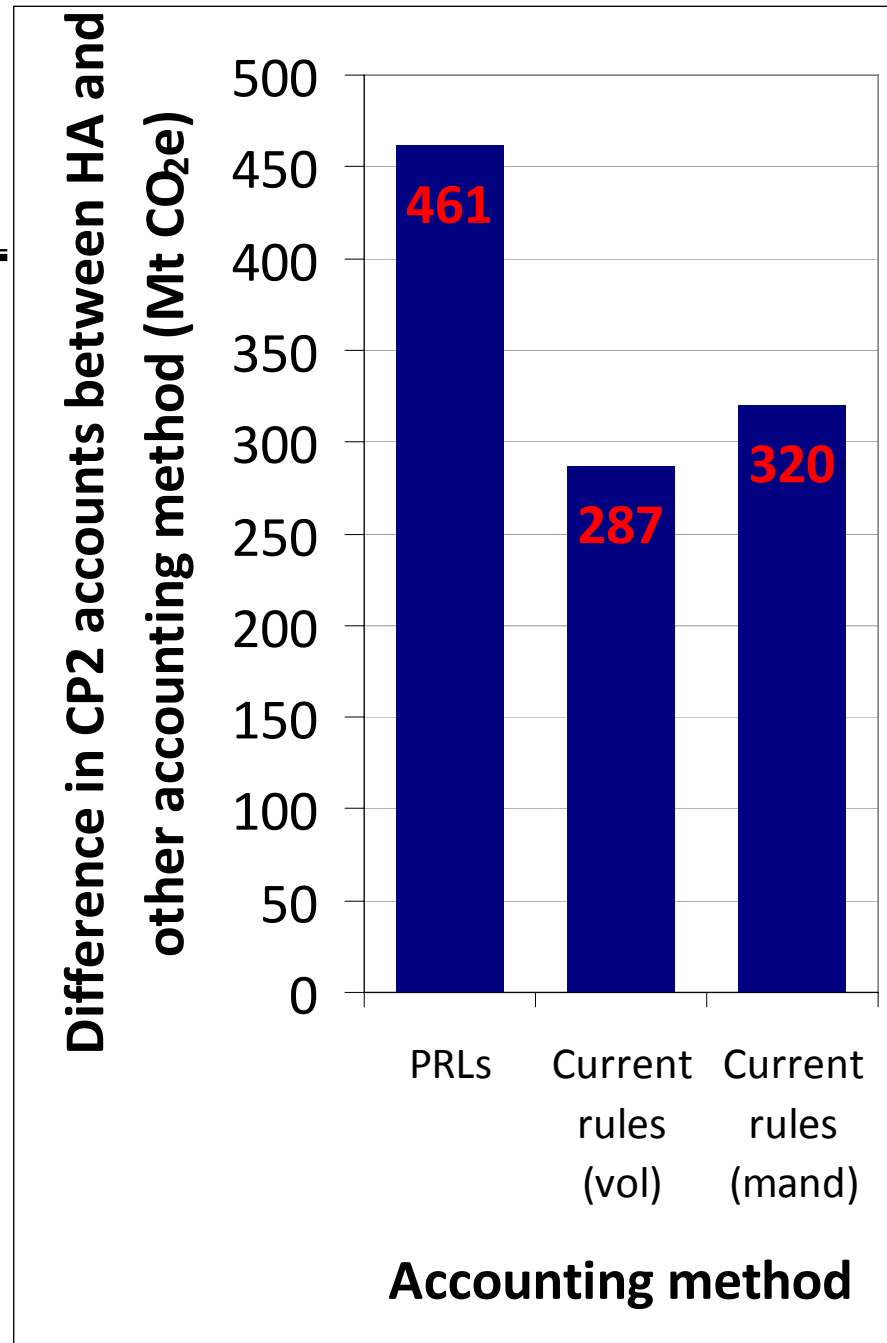
Current Rules

Pros

- Accounts for an estimated 140-170 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 290 Mt (320 Mt) still unaccounted
- Preserves voluntary framework that lets Parties increase emissions without penalty



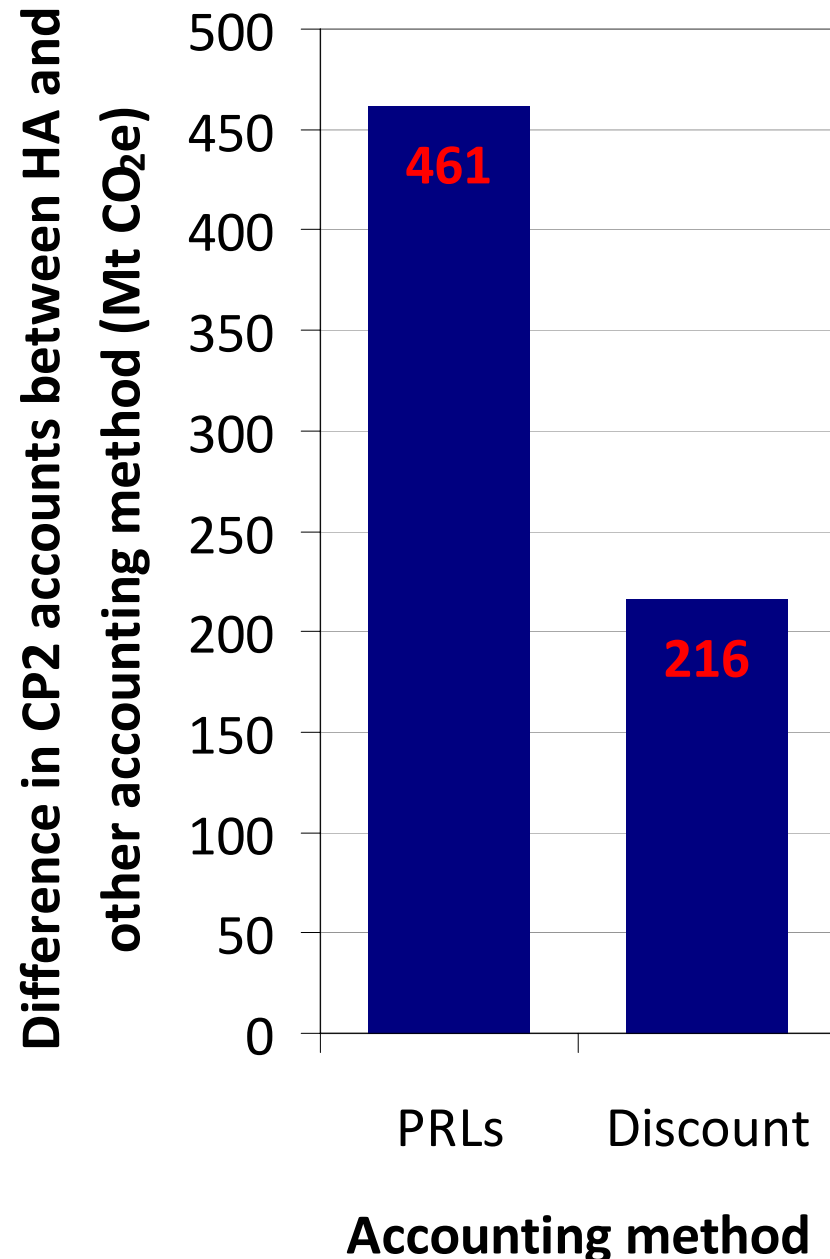
85% discount

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 220 Mt still unaccounted
- Creates fungibility problems for trading and internal accounting



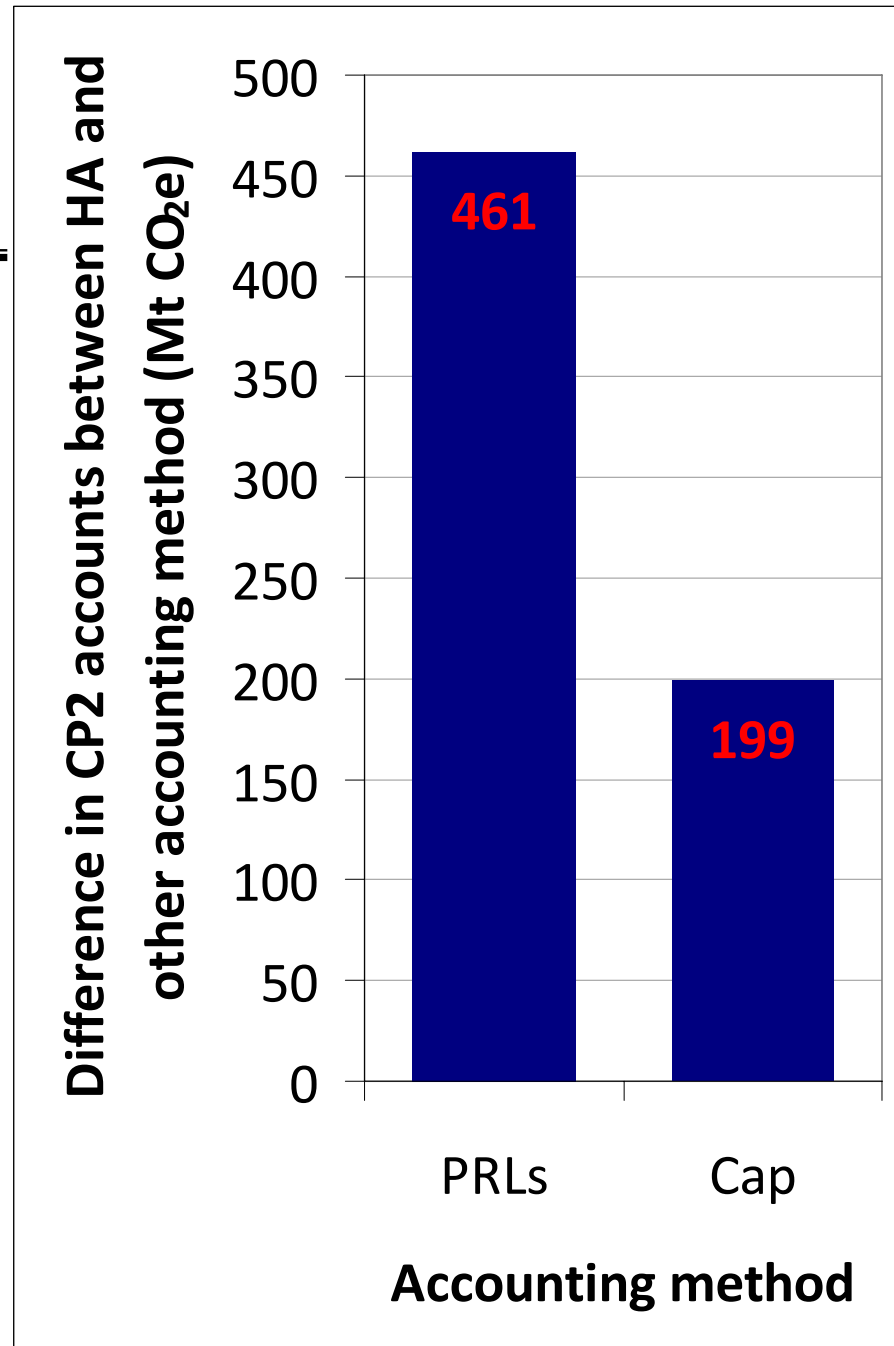
PRLs with 3% cap

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 200 Mt still unaccounted
- Does not address accountability for increasing emissions



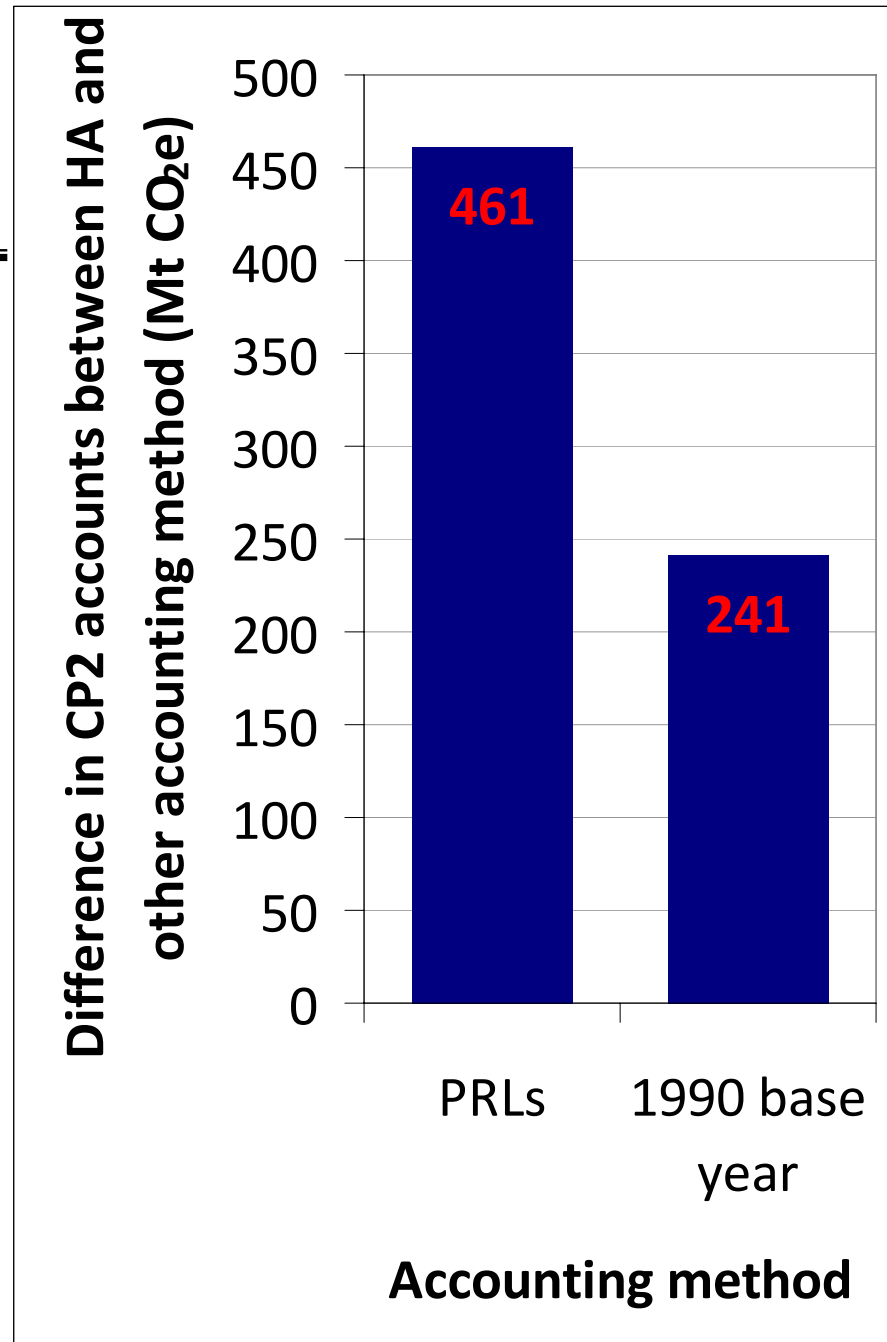
1990 Base Year

Pros

- Accounts for an estimated 220 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 200 Mt still unaccounted



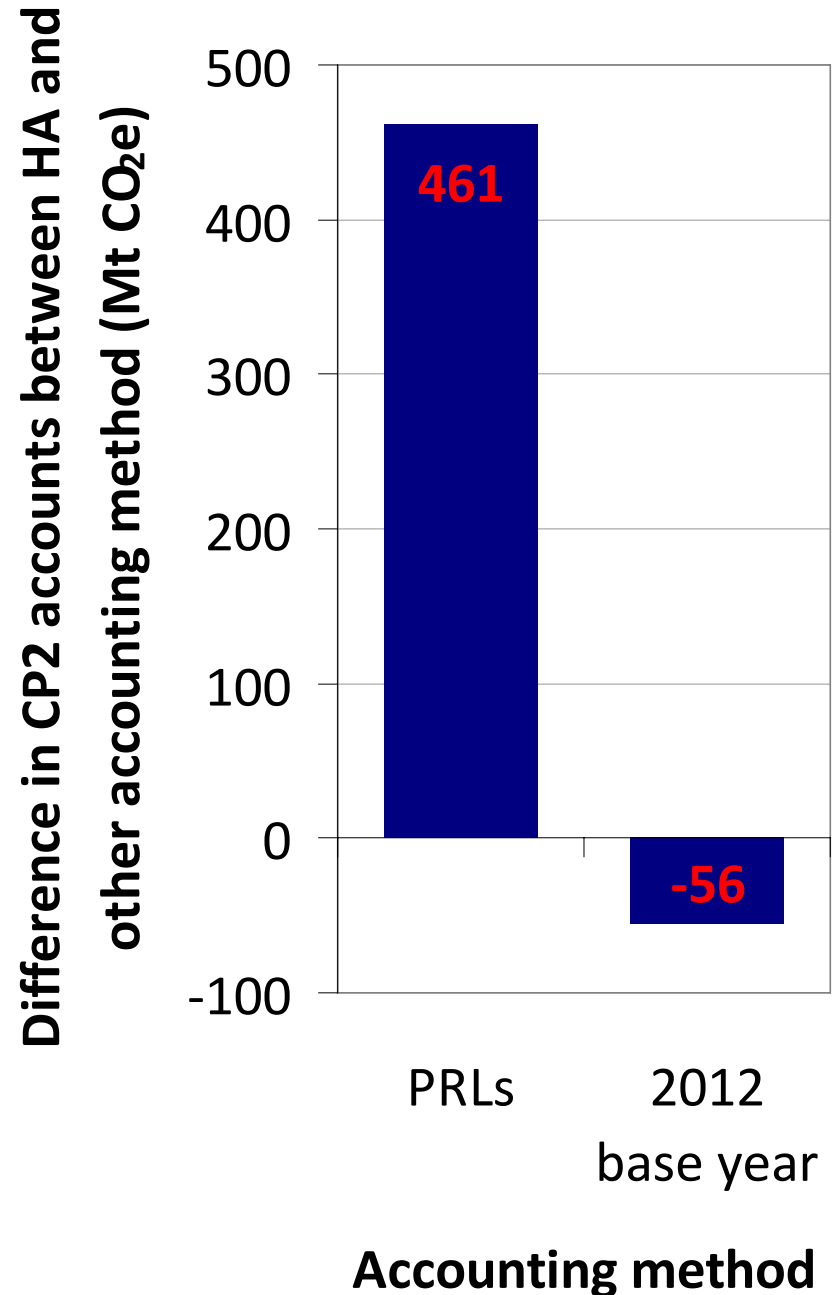
2012 Base Year

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
- Would disproportionately penalize a few countries
- Methodological difficulty in setting economy-wide targets



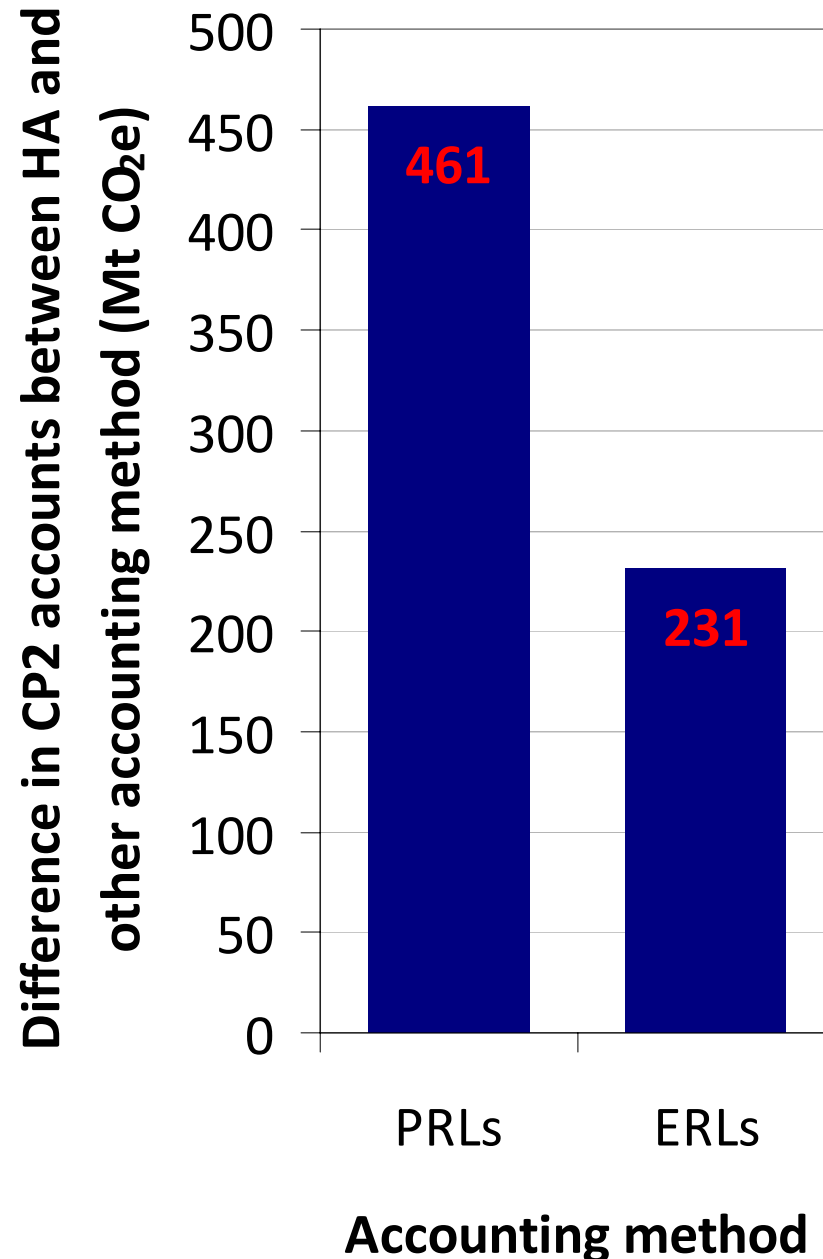
'Enhanced' Reference Levels

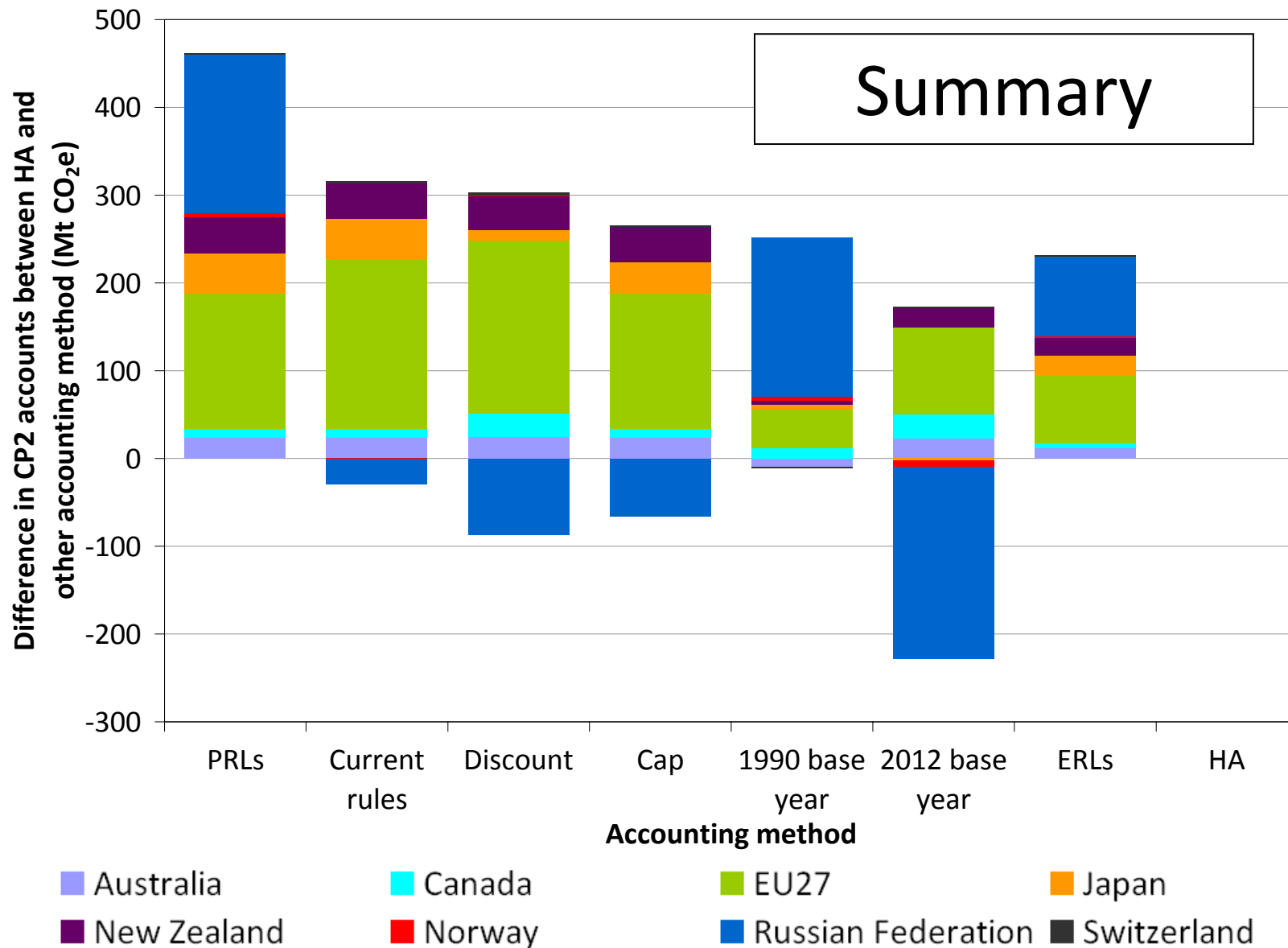
Pros

- Accounts for an estimated 230 Mt more than PRLs
- Demonstrates ambition to take action in the sector

Cons

- Fails to improve integrity of accounting system
- About 230 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

- 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

- 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 also appears to close the gap, but this compares forecasts to forecasts (highly uncertain)

Other Important LULUCF Issues

- 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!

