

REDD Carbon Market Integration: Implications and Approaches

IDDRI Roundtable

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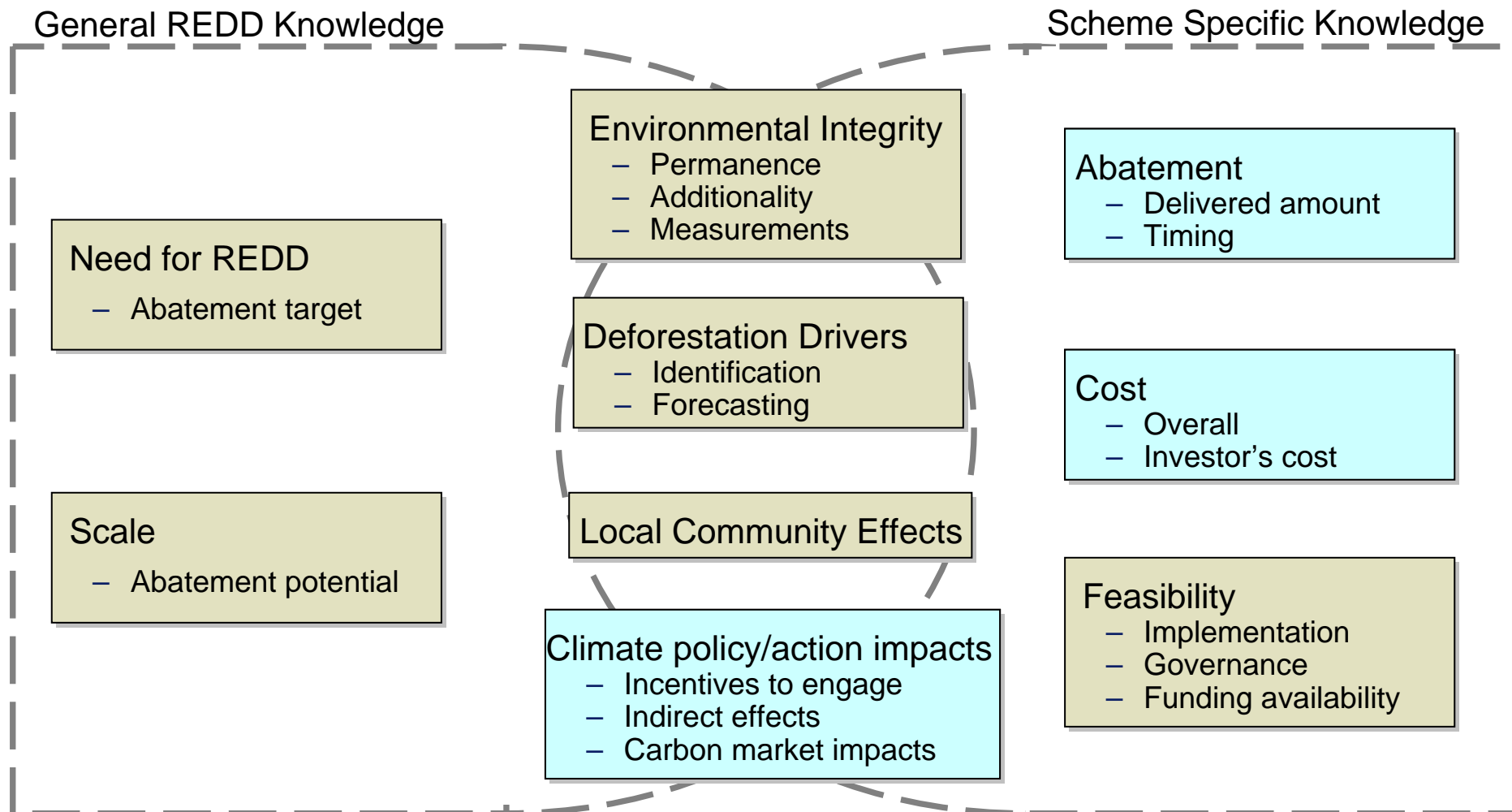
REDD is an attractive option for reducing emissions--but REDD is complex--and consensus may be difficult to achieve

- ▶ REDD concept is simple
 - Reduced rates of deforestation emissions are rewarded
 - Perhaps even permanent protection results

- ▶ Climate change negotiations are challenging in general
 - Externalities cross generations and are not uniformly valued
 - Multi-party coordination problem
 - Differentiated capacities lead to differentiated responsibilities

- ▶ Agreement on deforestation involves additional complexities
 - Methodological and measurement issues
 - Permanence and leakage
 - May be seen to reinforce Annex I/non-Annex I divide
 - Competition between CDM and REDD activities

To give us the best chance of succeeding in moving ahead with REDD we need to ensure we have the necessary knowledge to optimise policy



A variety of REDD schemes have been proposed

Output methods			Input methods	
Scale \ Funding	Market	Funds	International	Best practice development
National-level	Cap and trade (CAT), Reference level and credit (RAC)	Compensated reductions	National-level	Policies and measures (PAM)
Projects	CDM expansion to REDD	Conservation projects (ICDP, PES, etc.)	Projects	Agricultural intensification

Source: NZ MAF 2008, "Review and Assessment of Options for Reducing Emissions from Deforestation in Developing Countries"

We have focused our investigations on the potential role of the carbon market in financing REDD

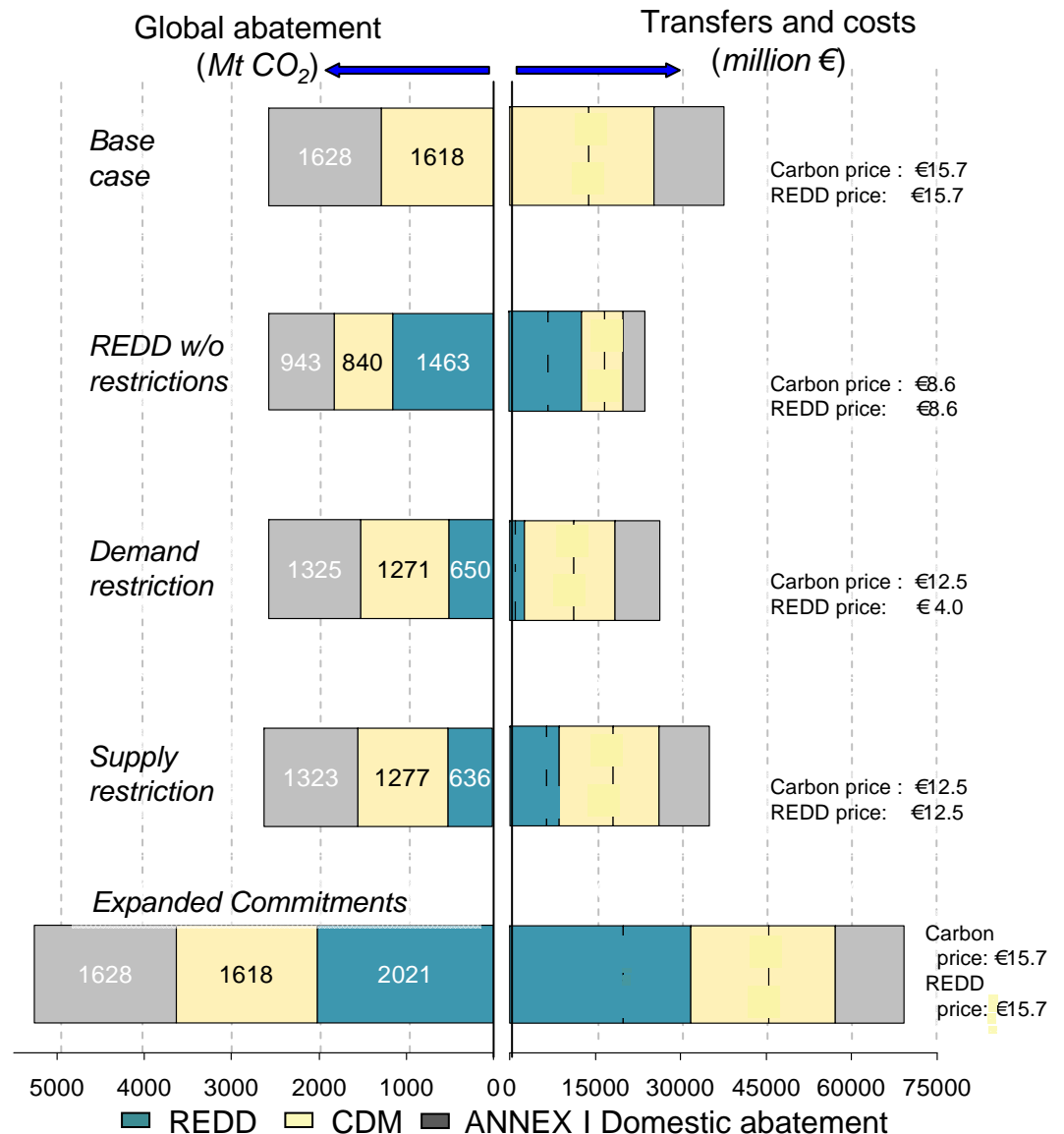
What happens to carbon markets as REDD is introduced?

- ▶ Under a current view of overall commitment levels and no market restrictions
 - Carbon price roughly halves
 - Compliance costs
 - CDM volume plummets

- ▶ Demand or supply restrictions mitigate impact
 - Moderate international carbon price reduction
 - CDM and Annex I domestic abatement less affected
 - REDD regions receive much less funding under demand scenarios (avoided cost for Annex I)

- ▶ Expanded commitments harnesses the efficiencies of unlimited REDD trading
 - Constant price signal in our scenario leads to identical investment in CDM, Annex I domestic abatement
 - 62 % greater overall abatement at 49% greater cost overall
 - Annex I costs increase 84%
 - Surge in transfers to developing nations

Simulation of International Carbon Compliance Market in 2020



Source: Modelling conducted by ZEW and M-co for NZ MAF see carbon.m-co.co.nz

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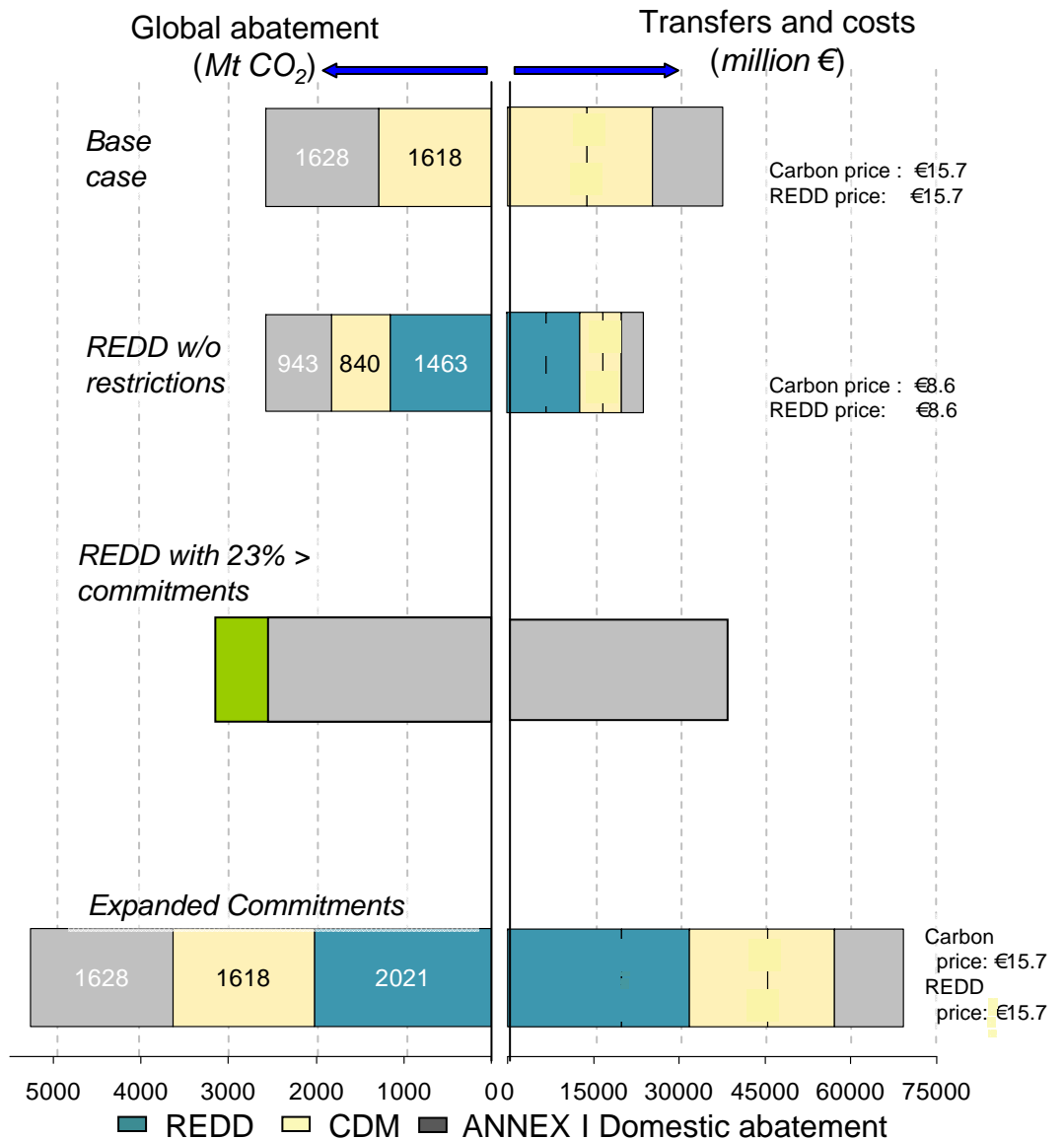
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▶ Commitments can expand 23% without increasing Annex I compliance costs

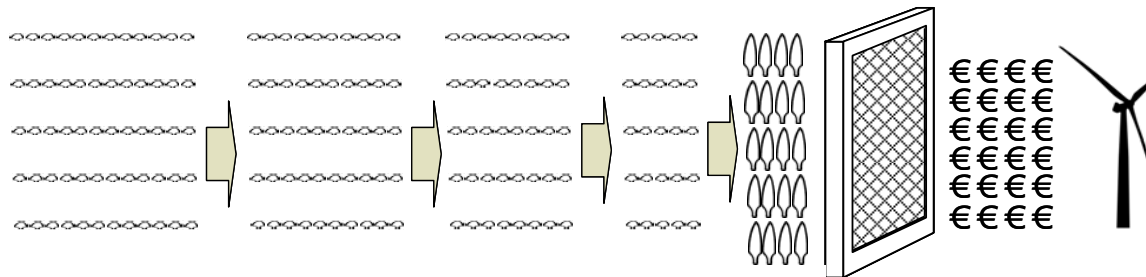
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Significant concerns around environmental integrity of REDD activities need to be addressed in any solution

- ▶ For freely trading units, REDD credits should be “as good” as other units in the market
 - Permanence
 - REDD “Hot Air”
 - Leakage
- ▶ The cost profile of REDD units is not well understood as opportunity costs and other drivers vary
- ▶ One option is to discount calculated REDD emission reductions to account for environmental integrity issues



$$r_{REDD} = r_{measurement} \cdot r_{reflevel} \cdot r_{leakage}$$

$$r_{REDD} = 0.55 \cdot 0.85 \cdot 0.65 = 0.30$$

Final thoughts and points for discussion

- ▶ Incorporating REDD in international carbon markets requires:
 - Consideration prior to setting targets
 - REDD units with similar environmental credibility to other units
- ▶ Need to consider efficiency of options for REDD or we may waste an opportunity to invest in deeper emissions reduction commitments

Going forward...

- ▶ Where do we still have information gaps?
 - What questions are being asked by the parties?
 - What are the main concerns with REDD?
- ▶ Considering this, what are the information priorities? What answers are needed ahead of Copenhagen?

Appendix - Gearing

<i>Factor</i>	<i>Value</i>	<i>Source/Comments</i>
Natural and indirect effects	Not assessed	Policy scenario assumes that supplying nations assume responsibility and rewards for indirect effects.
Measurement error	0.55	Persson and Azar's (2006) estimate
Hot air and reference levels	0.85	Authors' assumption
Leakage	0.65	Half of estimated single region leakage from Gan (2007)
Double counting	Not assessed	Policy scenario assumes host governments are not receiving additional payments and crediting is adjusted for any payments under voluntary schemes
Non-permanence	Not applicable	Assumes mandatory buffering of units as under the VCS, outside of the gearing mechanism
Co-benefits	Not assessed	Policy scenario assumes lack of international convergence on valuing and funding co-benefits

Note: The factor value represents the percentage of credits remaining after application of a factor, i.e. a value of 0.8 is an exclusion of 20% of credits.