

The economics of international policy to reduce emissions from deforestation and degradation

Suzi Kerr, Charlotte Streck and Arthur van Benthem

We first present a simple model of international costs and benefits of avoided deforestation. This model frames identification of the potential gains from avoided deforestation; distributional implications; the implications of incomplete global agreements; and interactions with a wider carbon market. Second we consider ‘international’ policy design – policies that involve funding from, direct participation by and/or control by industrialized countries or regions. We separate developing countries into two groups: those with institutions strong enough to commit to performance-based contracts at the scale of large political jurisdictions; and countries either without strong institutions that are specific to regulation of deforestation (e.g. carbon monitoring), or more generally weak institutions.¹

For the ‘strong’ group of countries we use a formal microeconomic model to discuss the key design issues for performance-based contracts and potential solutions:

- 1 Compliance:
 - a. monitoring (accuracy, bias and cost)
 - b. permanence (e.g. liability versus payments for temporary storage)
 - c. scope (deforestation, degradation, enhancement, a/reforestation)
- 2 Scale (communities, regional, national)
- 3 Price / contract form
- 4 Baseline setting (stringency and evolution over time)
- 5 Linkage to wider carbon markets

The policy criteria we will be concerned with are: efficiency, environmental outcome, risk, average cost of mitigation for industrialized countries, and benefits to developing countries. We will explore the theoretical implications of different options on these criteria through their impacts on participation, adverse selection, leakage, risk, bargaining and trading efficiency. We discuss the lessons from limited international experience with these instruments, in particular the design of contracts that Norway has signed with a handful of countries.

We then consider policies that require international involvement (e.g. for funding, knowledge transfer or legal or commercial-practice changes outside the developing country) and can be used to reduce deforestation in countries whether or not they are ready for performance-based contracts. This section will include empirical evidence where it is available and also help frame the discussion in the third paper. These policies might reduce deforestation directly. These may also reduce leakage and encourage broader participation over time thus enhancing the effectiveness of the performance-based contracts. Such policies include: strengthening park or forestry enforcement institutions; assistance with concession negotiation, land titling, avoiding perverse environmental (e.g. biodiversity) or human rights externalities that are of concern to the industrialized countries or enhancing positive externalities; knowledge and technology transfer; and other policies to improve agricultural and forestry productivity so as to reduce the pressure to extend agriculture and commercial forestry into tropical forests. Other policies would directly facilitate countries’ eventual movement into performance-based

¹ The first group of countries could be considered to be in ‘Phase 3’ using the Meridian (2008) terminology while the others are in phases 1 or 2.

contracts (e.g. building credible carbon monitoring system or predicting credible reference levels as a basis for negotiation over baselines). If the country either has a performance-based contract or has the potential for one in the future, direct funding for policies to reduce deforestation or interim funding for capacity building might be in the form of buying the option to purchase credits generated under the contract at a favourable price.

A third set of policies are, at least in part, substitutes for a performance-based contract. These aim to reduce deforestation pressures by internalizing climate and other environmental externalities at the industrialized country end (through direct action by industrialized country or global institutions). Examples of this include internalizing the estimated cost in terms of deforestation in the price of biofuels and other agricultural and forestry products; direct investments in R&D, international consumer movements (e.g. forest certification aimed at carbon rather than biodiversity); changing investment analysis for loans to include carbon implications (voluntarily for private investors and compulsorily for national or international public institutions); making loans conditional on specified forest protection actions; or debt relief to reduce the incentive for governments to use timber extraction to address current account deficits. The paper will end by summarizing key policy implications that are already well supported and identifying areas where more theoretical work is needed and where more empirical work seems valuable.