Defining Forests under the Kyoto Protocol: a way forward

Sean Cadman October 2008[1]

Background

Under the Marrakesh Accords the intrinsic problems with a structurally based definition were identified and parties were asked through SBSTA to come up with a Biome based definition, namely:

> Decision 11/CP.7 Land use, land-use change and forestry
>
> - *"2 (b) investigate the possible application of biome-specific forest definitions for the second and subsequent commitment periods with a view to the Conference of the Parties at its tenth session recommending a decision for adoption on the use of such biome-specific forest definitions for future commitment periods to the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol at its first session;"*

Though this decision has yet to be implemented it provides the formal basis for revision of the KP definition of forest.

One could therefore propose a solution that while not addressing the admirable and desirable aim to establish biome based definitions will at least prevent perverse outcomes associated with plantation development in the second commitment period under LULUCF rules. This revised definition would have the added advantage of forestalling similarly perverse outcomes becoming entrenched under future REDD mechanisms.

The current definition used for reporting and accounting purposes under the Kyoto Protocol (hereafter, KP) is structurally based comprising:

- A minimum area of land of 0.05 hectares with tree crown cover (or equivalent stocking level) of more than 10 per cent with trees with the potential to reach a minimum height of 2 metres at maturity *in situ*.
- It includes (i) young stands of natural regeneration; (ii) all plantations which have yet to reach a crown density of 10-30 per cent or tree height of 2-5 metres; (iii) areas normally forming part of the forest area which are temporarily unstocked as a result of human intervention such as harvesting or natural causes but which are expected to revert to forest.

The KP definition makes no distinction between, among other things, planted crops of monoculture perennial woody plants and complex biodiverse natural forests.

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The KP definition has already led to significantly perverse accounting and reporting outcomes. For example, where primary natural forests are cleared and converted to short rotation fuel and cellulose fibre crops, this land cover change is not classed as deforestation. Of course emissions increase whether or not they are accounted for; leading to increased atmospheric forcing that will take hundreds of years to reverse.

Further to existing concerns, proposals being put forward for 'land-swapping' by parties for the post 2012 commitment period would see even more perverse outcomes entrenched under the current definition. This is particularly ironic given that the main proponent of this proposal, New Zealand only allows logging in plantations.

Proposed Definitions and operational suggestions.

Under this proposal the existing structural definition would be retained and two sub categories erected (Natural Forests and Plantations).The term "natural forests" in this paper is synonymous with "native forest" as used in some countries.

It is proposed that Plantations, would be accounted for separately from Natural Forests and reported under AFOLU as an agricultural activity. This would avoid the current perverse outcomes because conversion from Natural Forest to Plantation would be treated like any other forest to agriculture conversion - as deforestation and / or forest degradation.

1 Natural Forest

1. ***A natural forest is a terrestrial ecosystem generated and maintained primarily through natural ecological and evolutionary processes.***

Natural forests are an essential part of the global carbon cycle, and have played, and continue to play, a major role in modulating the strength of the greenhouse affect.

2 Plantations

2. ***A plantation is a crop of trees planted and regularly harvested by humans.***.

ISSUE 1 **SEMI NATURAL FORESTS**

Some 'forests' have been under intensive forest management for up to 7 rotations. This class of forest is often called 'semi-natural' where these forests are primarily used for wood production and are maintained by hand planting, fertilizer application and the use of herbicides. Parties could nominate them as plantations for accounting and reporting purposes.

ISSUE 2 **NATURAL REGROWTH ON PREVIOUSLY CLEARED LAND**

In some regions forests can regenerate on previously cleared land from adjacent un-cleared areas, ground stored and / or wind-blown seed. If these are allowed to grow without significant management interventions they should be regarded as natural forests regardless of tenure.

ISSUE 3 **SILVICULTURAL REGENERATION**

These are forests which have been subjected to one or two intense logging cycles but allowed to regenerate with minimal intervention using natural seed fall and /or aerial seeding. This would be classed as natural forest as in the absence of further cutting they are capable of meeting the definition of natural forests.

ISSUE 4 **FOREST RESTORATION PLANTINGS**

In many regions trees are being planted in complex multi- species plantings or have been established as complex agro-forests with high structural and species diversity, in some cases the core species are native to the region. These systems may combine planted vegetation, providing both useful products and environmental services, with naturally occurring succession, stewarded by landowners over the long term. The sequestration of carbon is an additional service in those systems that include mature trees. In these circumstances, if the plantings are designated as permanent they could be nominated as natural forests for reporting and accounting purposes.

ADDITIONAL GUIDANCE

Recent Work by FAO[2] (see below) although somewhat Eurocentric aligns quite closely to the categories identified above and could also form the basis for assignation to the simple 2 class categorization for the purposes of the UNFCCC proposed in this paper.

[2] FAO 2007 GLOBAL FOREST RESOURCES ASSESSMENT 2010 SPECIFICATION OF NATIONAL REPORTING TABLES FOR FRA 2010 Forest Resources Assessment Programme Working paper 135 Rome 2007

After FAO 2007 (From T4.2) Characteristics categories and definitions[2]

Category Definition

Primary forest, Naturally regenerated forest of native species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.

Explanatory note
1. Some key characteristics of primary forests are:
- they show natural forest dynamics, such as natural tree species composition, occurrence of dead wood, natural age structure and natural regeneration processes;
- the area is large enough to maintain its natural characteristics;
- there has been no known significant human intervention or the last significant human intervention was long enough ago to have allowed the natural species composition and processes to have become re-established.

Other naturally regenerated Forest Naturally regenerated forest where there are clearly visible indications of human activities.

Explanatory notes
1. Includes selectively logged-over areas, areas regenerating following agricultural land use, areas recovering from human-induced fires, etc.
2. Includes forests where it is not possible to distinguish whether planted or naturally regenerated.
3. Includes forests with a mix of naturally regenerated trees and planted/seeded trees, and where the naturally regenerated trees are expected to constitute more than 50% of the growing stock at stand maturity.

Other naturally regenerated forest of introduced species *(sub-category)* Other naturally regenerated forest where the trees are predominantly of introduces species.

Explanatory note
1. In this context, predominantly means that the trees of introduced species are expected to constitute more than 50% of the growing stock at maturity.

Planted forest. Forest predominantly composed of trees established through planting and/or deliberate seeding.

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1. In this context, predominantly means that the planted/seeded trees
are expected to constitute more than 50% of the growing stock at maturity.
2. Includes coppice from trees that were originally planted or seeded.
3. Excludes self-sown trees of introduced species.

Planted forest of introduced species *(sub-category)* Planted forest, where the planted/seeded trees are predominantly of introduced species.

Explanatory note
1. In this context, predominantly means that the planted/seeded trees of introduced species are expected to constitute more than 50% of the growing stock at maturity.