
REDD+ and wider low carbon development

Key message

REDD+ needs to link with other types of land management, particularly agriculture, as well as development policies outside the land use sector, to secure reduced emissions and socio-economic development.

1 **The drivers of deforestation are linked to economic interests both inside and outside the forest sector.** This means that REDD+ needs to be linked into wider low carbon development strategies in order to be effective. It also means that low carbon development strategies will have to provide alternative economic opportunities, or at least compensate those who lose opportunities.

2 Deforestation is caused by **direct drivers**, such as:

- **Agricultural expansion** is usually the dominant contributor and one of the main drivers of deforestation and degradation and the expansion of the forest frontier.
- **Wood extraction** is the principal intra-sectoral cause of forest degradation, and can also lead to deforestation, either directly or indirectly. Wood is extracted from forests for timber, pulpwood, fuelwood and charcoal. Logging and pulpwood clear-cutting have been a major cause of deforestation in Southeast Asia, whereas unsustainable fuelwood extraction and charcoal production primarily occur in the drier forest of sub-Saharan Africa¹.
- **Infrastructure developments**, such as road construction and improvement, is a further development that contributes most to deforestation².

Deforestation is also caused by **underlying drivers**, such as:

- **Macroeconomic factors:** The higher profitability of agriculture (agricultural rent) is the main economic factor underlying the conversion of forests to other uses³. Economic crisis can also stimulate deforestation. For example, when Indonesia's economy collapsed in 1997, many people who had lost their jobs in the formal sector turned to the forest to secure their livelihoods, leading to further deforestation.
- **Property rights and governance.** In some cases where it is not forest use, but alternative land uses (e.g., cattle ranching) that are seen in the long term as the most profitable land use, securing individual property rights serves to accelerate the conversion of forest to other uses⁴.

3 **Given the links between deforestation and agriculture, successful low carbon development policies need to connect REDD+ and the agriculture sector.** There have been some proposals as to how this could be achieved⁵, but in general they have been little discussed in the REDD+ literature. Approaches are also likely to differ across countries, depending on their position on the '[forest transition curve](#)' and there are potential perverse effects that need to be considered carefully in policy responses.

For example, in **forest rich countries** setting low tariffs on imports of staples may help to reduce deforestation by reducing the opportunity costs of participating in

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REDD+ and preventing agricultural encroachment. However, this would have equity impacts, especially through reduced economic opportunities for the rural poor, and leakage implications related to increased production abroad, that would need to be addressed. In **forest poor countries**, policies could include, for example, the promotion of agro-forestry or conservation set aside programmes. The equity effects of such policies would depend on the distribution of land ownership in the country.

Approaches are also likely to differ between types of agricultural systems. From an equity perspective it would make sense in the first instance to target large-scale agricultural systems in REDD+ strategies, rather than small-holder systems, where there could be high risks given the uncertainties about net benefits in the long term.

- 4 Wood fuel is both a source and a sink for greenhouse gases, so REDD+ will also need to link into energy policies.** Meridian notes that the climate benefits of stopping 'biomass extraction for fuel (fuel wood and charcoal) at rates greater than regrowth' may only be about 5-8% of the climate benefits resulting from stopping complete deforestation. Whilst these figure may be low overall, wood extraction for fuel is a major cause of degradation in some countries, and the overall area is large and increasing. IEA⁷ estimates that the number of people using fuel wood and other biomass fuels in Africa will rise by more than 40% to about 700 million. In Asia, even though consumption is declining, there may still be 1.7 billion users in 2030, and in Latin America, 70 million.

There are clear lessons from policy interventions in forest-energy systems⁸. On the demand side, policies to increase the substitution of clean electricity for fuel wood and on the supply side, policies to improve the efficiency of charcoal kilns combined with increased local ownership of trees, could be effective in some instances in reducing deforestation and degradation.

- 5 There are potential opportunities to link REDD+ and broader low carbon development strategies, such as 'green' economic recovery packages.** For example, Nair and Rutt (2009) propose that providing employment in forestry activities would have the double advantage of slowing down deforestation and degradation that would have taken place in the absence of employment; and augmenting carbon sequestration through increased tree planting and improved management of forests. Nair and Rutt (2009) estimate that "the annual outlay for rebuilding

Table 1: Potential new jobs in sustainable management of forests and level of investment required (annual targets for an initial five-year period)

Activity	New jobs (million, full-time equivalent)	Annual target area (million ha)	Approximate annual outlay (billion US\$)
Afforestation, reforestation, and desertification control	4-5	5	8
Improvement of productivity of existing planted forests	0.5-1.0	10	1
Watershed improvement	1-3	1	6
Indigenous forest management	1-2	4	5
Forest conservation	2-3	20	7
Agro-forestry	0.5-0.75	2	1
Fire management	1.0-1.25	10	5
Urban and peri-urban forestry	0.1-0.5	0.1	2
Skill improvement of forestry and wood industry workers	0.05		1
Total	10.1-16.5		36

Source Nair and Rutt (2009)

the forest asset base, focusing on the activities indicated above, would be approximately US\$36 billion. This could generate about 10 to 16 million jobs, largely depending on local conditions, especially costs of inputs. More jobs can be generated in developing countries where wages are relatively low.” There is significant potential for employment generation in the sustainable management of forests (Table 9).

Key publications on this issue

Chomtiz, K (2006) [At Loggerheads: Agricultural expansion, poverty reduction and environment in the Tropical Forests](#)

Ellis, K. (2009) [‘Policies for low carbon growth’](#), ODI research report, ODI, London, U.K.

Hofstad, O, Kohlin, G. and Namaala, J. (2009) ‘How can emissions from woodfuel be reduced?’ In: Angelsen, A. with Brockhaus, M., Sills, E., Sunderlin, W. D. and Wertz-Kanounikoff, S. (eds) [Realising REDD+: National strategy and policy options](#), CIFOR, Bogor, Indonesia.

Nair, C.T.S. and Rutt, R. (2009) [‘Creating forestry jobs to boost the economy and build a green future’](#), article developed from background paper “Impacts of Global Economic Turbulence on the Forest Sector” at the nineteenth session of the FAO Committee on Forestry, Rome, 20 March 2009.

Rudel (2009) ‘Reinforcing REDD+ with reduced emissions agricultural policy’, Angelsen, A. (Ed.) [Realising REDD+: National strategy and policy options](#). CIFOR, Bogor, Indonesia.

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- 1 Kaimowitz, D. and Angelsen, A. 1998. ‘Economic Models of Deforestation: A Review’, CIFOR
 - 2 Chomitz et al. 2007
 - 3 Wunder and Verbist 2003, cited in Kanninen, M. et al. 2007. ‘Do trees grow on money? The implications of deforestation research for policies to promote REDD’, CIFOR
 - 4 Ibid.
 - 5 Rudel (2009) proposes that this would primarily take the form of intensification near urban areas for example, through irrigation of easily accessible land, credit programmes that target peri-urban farmers, support for direct marketing, agro-forestry, and research and development on intensification.
 - 6 Meridian (2009) [‘REDD Options Assessment Report \(REDD-OAR\)’](#).
 - 7 IEA, 2006
 - 8 Hofstad et al. 2009 list four key lessons: 1. Introducing maximum prices in urban areas leads to high demand, low supply, queues and black markets; 2. Establishing large fuel wood plantations is rarely effective; 3. Control measures along transport routes are rarely effective and lead to corruption; 4. New technologies are not readily adopted unless they are cheap.