

Policy Analysis for Deforestation in India and its Impact

Siddhartha Saxena

Indian Institute of Management, Vastrapur, Ahmedabad
E-mail: siddhartha1307@gmail.com

Abstract—*The problems of deforestation have been causing some growing concerns for decades throughout the globe and India is no exception. Ever since civilization has become more advanced with new technology, humans have been exploiting various resources of nature for profit and survival. Due to the rise of the world's population and the potential promise of wealth, greed has seemed to cause the rampant over-exploitation of earth's natural resources, thus leading to environmental issues like deforestation. In places like India, the effects of deforestation have caused irreparable damage across the country wiping out natural habitats and delicate ecosystems. Many environmental historians hold the opinion that the large-scale destruction of the forests in India is rooted in the commercially oriented forest use and ownership policies as suggested by the government and these have continued in their essence for several years even in post independence India. In more recent times it is the new policies and programs of development; rapid industrialization, urbanization and growing consumerism that has resulted in the wide-scale destruction of the forests, although there are mechanism and policies both in terms of mitigating and analyzing the impact of deforestation both by environmentalist and the policy makers. The ground realities are very different. Today In the era when we talk about land growth deforestation related policies needs a new look out. The paper talks about various policies and their effectiveness using the literature and data available through secondary resources.*

Keywords: Mitigation, Policy Analysis, Deforestation, Reality check.

1. INTRODUCTION

Despite repeated promises and claims of green policies, government and companies have so far failed to seriously address the problem of deforestation. Destructive and illegal logging is laying waste to huge areas of forest, making a massive contribution towards climate change and is having a devastating effect on forest-dwelling people and wildlife.

1) Poorly enforced policies

Our own government in particular should feel awful by the way we are mitigating the whole issue and neglecting it. The government agencies claim that it is working to protect forests elsewhere in the world, but its efforts at preventing its own issues which have caused catastrophe like Kedaarnath tragedy.

The causes of tropical deforestation are complex, varying across countries and over time in response to different social,

cultural, and macroeconomic conditions [1]. Broadly, three major barriers to enacting effective policies to reduce forest loss are: (i) profitability incentives often run counter to forest conservation and sustainable forest management [2]; (ii) many direct and indirect drivers of deforestation lie outside of the forest sector, especially in agricultural policies and markets [3]; and (iii) limited regulatory and institutional capacity and insufficient resources constrain the ability of many governments to implement forest and related sectoral policies on the ground [4].

In the face of these challenges, national forest policies designed to slow deforestation on public lands in developing countries have had mixed success:

2. NATIONAL INITIATIVES

In countries where institutional and regulatory capacities are insufficient, new clearing by commercial and small-scale agriculturalists responding to market signals continues to be a dominant driver of deforestation [3].

A number of national initiatives are underway to combat illegal logging [5]. While these have increased the number of charges and convictions, it is too early to assess their impact on forest degradation and deforestation.

Legally protecting forests by designating protected areas, indigenous reserves, non-timber forest reserves and community reserves have proven effective in maintaining forest cover in some countries, while in others, a lack of resources and personnel result in the conversion of legally protected forests to other land uses [5].

China [6], the Philippines and Thailand [7] have significantly reduced deforestation rates in response to experiencing severe environmental and public health consequences of forest loss and degradation. In India, the Joint Forest Management programme has been effective in partnering with communities to reduce forest degradation [8]. These examples indicate that strong and motivated government institutions and public support are key factors in implementing effective forest policies.

Options for maintaining forests on private lands in developing countries are generally more limited than on public lands, as governments typically have less regulatory control. An important exception is private landholdings in the Brazilian Amazon, where the government requires that landowners maintain 80% of the property under forest cover. Although this regulation has had limited effectiveness in the past [9], recent experience with a licensing and monitoring system in the state of MatoGrosso has shown that commitment to enforcement can significantly reduce deforestation rates.

A recently developed approach is for governments to provide environmental service payments to private forest owners in developing countries, thereby providing a direct financial incentive for the retention of forest cover. Relatively high transaction costs and insecure land and resource tenure have thus far limited applications of this approach in many countries [9]. However, significant potential may exist for developing payment schemes for restoration and retention of forest cover to provide climate mitigation and watershed protection services.

In addition to national-level policies, numerous international policy initiatives to support countries in their efforts to reduce deforestation have also been attempted: Forest policy processes, such as the UN Forum on Forests, and the International Tropical Timber Organization have provided support to national forest planning efforts but have not yet had demonstrable impacts on reducing deforestation [10].

The World Bank has modified lending policies to reduce the risk of direct negative impacts to forests, but this does not appear to have measurably slowed deforestation [11].

The Food and Agricultural Organization (FAO) Forestry Programme has for decades provided a broad range of technical support in sustainable forest management [12]; assessing measurable impacts has been limited by the lack of an effective monitoring programme [13].

Taken together, non-climate policies have had minimal impact on slowing tropical deforestation, the single largest contribution of land-use change to global carbon emissions. One potential source of additional financing for reducing deforestation in developing countries is through well-constructed carbon markets or other environmental service payment schemes[15]. Under the UNFCCC and Kyoto Protocol, no climate policies currently exist to reduce emissions from deforestation or forest degradation in developing countries. The decision to exclude avoided deforestation projects from the CDM in the Kyoto Protocol's first commitment period was in part based on methodological concerns. These concerns are particularly associated with additionality and baseline setting and whether leakage could be sufficiently controlled or quantified to allow for robust carbon crediting [16]. In December 2005, COP-11 established a two-year process to review relevant scientific, technical, and methodological issues and to consider possible policy

approaches and positive incentives for reducing emissions from deforestation in developing countries [17].

Other proposals emphasize accommodation to diverse national circumstances, including differing levels of development, and include a suggestion of separate targets for separate sectors [18]. This includes a "no-lose" target, whereby emission allowances can be sold if the target is reached. No additional emission allowances would have to be bought if the target was not met. A multi-stage approach such that the level of commitment of an individual country increases gradually over time; capacity building and technology research and development; or quantified sectoral emission limitation and reduction commitments similar to Annex 1 commitments under the Kyoto Protocol [19].

3. POLICIES AIMED TO PROMOTE AFFORESTATION AND REFORESTATION

Non-climate forest policies have a long history in successful creation of plantation forests on both public and private lands in developing and developed countries. If governments have strong regulatory and institutional capacities, they may successfully control land use on public lands, and state agencies can reforest these lands directly. In cases where such capacities are more limited, governments may enter into joint management agreements with communities, so that both parties share the costs and benefits of plantation establishment [20]. Incentives for plantation establishment may take the form of afforestation grants, investment in transportation and roads, energy subsidies, tax exemptions for forestry investments, and tariffs against competing imports[21]. In contrast to conservation of existing forests, the underlying financial incentives to establish plantations may be positive. However, the creation of virtually all significant plantation estates has relied upon government support, at least in the initial stages. This is due, in part, to the illiquidity of the investment, the high cost of capital establishment and long waiting period for financial return.

4. POLICIES TO IMPROVE FOREST MANAGEMENT

Industrialized countries generally have sufficient resources to implement policy changes in public forests. However, the fact that these forests are already managed to relatively high standards may limit possibilities for increasing sequestration through changed management practices (e.g., by changing species mix, lengthening rotations, reducing harvest damage and or accelerating replanting rates). There may be possibilities to reduce harvest rates to increase carbon storage however, for example, by reducing harvest rates and/or harvest damage.

Governments typically have less authority to regulate land use on private lands, and so have relied upon providing incentives to maintain forest cover, or to improve management. These incentives can take the form of tax credits, subsidies, cost

sharing, contracts, technical assistance, and environmental service payments. In the United States, for example, several government programmes promote the establishment, retention, and improved management of forest cover on private lands, often of marginal agricultural quality

The lack of robust institutional and regulatory frameworks, trained personnel, and secure land tenure has constrained the effectiveness of forest management in many developing countries[3,2]. Africa, for example, had about 649 million forested hectares as of 2000 [12,2]. Of this, only 5.5 million ha (0.8%) had long-term management plans, and only 0.9 million ha (0.1%) were certified to sound forestry standards. Thus far, efforts to improve logging practices in developing countries have met with limited success. For example, reduced-impact logging (RIL) techniques would increase carbon storage over traditional logging, but have not been widely adopted by logging companies, even when they lead to cost savings. Nevertheless, there are several examples where large investments in building technical and institutional capacity have dramatically improved forestry practices[21].

REFERENCES

- [1] **Geist, H.J.** and E.F. Lambin, 2002: Proximate causes and underlying driving forces of tropical deforestation. *BioScience*, **52**, pp. 143-150.
- [2] **Tacconi, L.**, M. Boscolo, and D. Brack, 2003: National and international policies to control illegal forest activities. Center for International Forest Research, Jakarta.
- [3] **Wunder, S.**, 2004: Policy options for stabilising the forest frontier: A global perspective. In *Land Use, Nature Conservation and the Stability of Rainforest Margins in Southeast Asia*, M. Gerold, M. Fremerey, and E. Guhardja (eds). Springer-Verlag Berlin, pp. 3-25.
- [4] **Sizer, N.**, S. Bass, and J. Mayers (Coordinating Lead Authors), 2005: Wood, fuelwood and non-wood forest products. In *Millennium Ecosystem Assessment, 2005: Policy Responses: Findings of the Responses Working Group*. Ecosystems and Human Well-being, **3**, pp. 257-293. Island Press, Washington, D.C.
- [5] **Mertens, B.**, D. Kaimowitz, A. Puntodewo, J. Vanclay, and P. Mendez, 2004: Modeling deforestation at distinct geographic scales and time periods in Santa Cruz, Bolivia. *International Regional Science Review*, **27**(3), pp. 271-296.
- [6] **Cohen, D.H.**, L. Lee, and I. Vertinsky, 2002: China's natural forest protection program (NFPP): impact on trade policies regarding wood. Prepared for CIDA with the Research Center for Ecological and Environmental Economics, Chinese Academy of Social Sciences, 63 pp
- [7] **Granger, A.**, 1997: Bringing tropical deforestation under control change programme. Global environmental change programme briefings, Number 16. Economic and Social Research Council, Global Environmental Change Programme, Sussex, U.K., 4 pp. <<http://www.sussex.ac.uk/Units/gec/pubs/briefing/brief-16.pdf>> accessed 1 September 2005.
- [8] **Bhat, D.M.**, K.S. Murali, and N.H. Ravindranath, 2001: Formation and recovery of secondary forests in India: A particular reference to western ghats in South India. *Journal of Tropical Forest Science*, **13**(4), pp. 601-620.
- [9] **Alves, D.S.**, J.L.G. Pereira, C.L. de Sousa, J.V. Soares, and F. Yamaguchi, 1999: Characterizing landscape changes in central Rondonia using Landsat TM imagery. *International Journal of Remote Sensing*, **20**, pp. 2877-2882.
- [10] **Grieg-Gran, M.**, 2004: Making environmental service payments work for the poor: some experiences from Latin America. International Fund for Agricultural Development Governing Council Side Event. <www.ifad.org/events/gc/27/side/presentation/ieed.ppt> accessed 1 September 2005.
- [11] **Speth, J.G.**, 2002: Recycling Environmentalism. *Foreign Policy*, July/August, pp. 74-76.
- [12] **WBOED**, 2000: Striking the right balance: World Bank forest strategy. World Bank Operations Evaluation Department, *Precis*, 203, 6 pp.
- [13] **FAO**, 2006b: Summaries of FAO's work in forestry. Rome, Italy. <<http://www.fao.org/forestry/foris/webview/forestry2/index.jsp?siteId=3741&siteTreeId=11467&langId=1&geoId=0>> accessed 27 October 2006.
- [14] **Dublin, H.** and C. Volante, 2004: Biodiversity Program Study 2004. Global Environment Facility Office of Monitoring and Evaluation, Washington, D.C., 141 pp.
- [15] **Winrock International**, 2004: Financial incentives to communities for stewardship of environmental resources: feasibility study. Arlington, VA, 60 pp
- [16] **Trines, E.**, N. Höhne, M. Jung, M. Skutsch, A. Petsonk, G. Silva-Chavez, P. Smith, G.-J. Nabuurs, P. Verweij, B. and Schlamadinger, 2006: Integrating agriculture, forestry and other land use in future climate regimes: Methodological issues and policy options. WAB Report 500101002. Netherlands Environmental Assessment Agency, Bilthoven, the Netherlands.
- [17] **UNFCCC**, 2006: Background paper for the Workshop on Reducing Emissions from Deforestation in Developing Countries, Part I: Scientific, socio-economic, technical and methodological issues related to deforestation in developing countries. Working paper No. 1 (a), 30 August-1 September, Rome, Italy.
- [18] **Grassl, H.**, J. Kokott, M. Kulesa, J. Luther, F. Nuscheler, R. Sauerborn, H.-J. Schellnhuber, R. Schubert, and E.-D. Schulze: 2003. Climate protection strategies for the 21st century: Kyoto and beyond. Berlin: German Advisory Council on Global Change (WBGU).
- [19] **Gaddis, D.A.**, B.D. New, F.W. Cabbage, R.C. Abt, and R.J. Moulton, 1995: Accomplishments and economic evaluations of the Forestry Incentive Program: a review. SCFER Working Paper (78), pp. 1-52. Southeastern Center for Forest Economics Research, Research Triangle Park, NC.
- [20] **FAO**, 2001: Global Forest Resources Assessment 2000. Main report. FAO Forestry Paper 140, 479 pp.
- [21] **Holmes, T.P.**, G.M. Blate, J.C. Zweede, R. Pereira Jr., P. Barreto, F. Boltz, and R. Bauch, 2002: Financial and ecological indicators of reduced impact logging performance in the eastern Amazon. *Forest Ecology and Management*, **163**, pp. 93-110.
- [22] **Dourojeanni, M.J.**, 1999: The future of Latin American forests. Environment Division Working Paper, Interamerican Development Bank, Washington D.C.