

Forest lands: More than just trees

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Abstract



Global rates of deforestation and forest degradation continue at persistently high levels, although annual net rates of forest loss have slowed to approximately 8 Mha as the extent of planted forests increases. Drivers of deforestation vary geographically. Conversion to both large- and small-scale agriculture remains dominant, and conversion to plantations, mining and infrastructure development is important in some regions. Forests, however, continue to be important to the livelihoods of millions of people, poor and rich, men and women, rural and urban. They provide a broad range of products that often escape the attention of decision makers, and an even broader range of services that are both poorly understood and commonly ignored. The direct contribution of forests to livelihoods varies widely with region, community, gender, ethnicity and management system. Research done by CIFOR with 50 research partners in over 8000 households living in and around forests in 25 developing countries shows that forest-derived income constitutes about 20% of their total household income, while income from the environment more generally — both forest and non-forest — makes up more than 25%. Globally, the most important part of that income comes from the sale of fuelwood, with timber sales second. The direct contribution of forests to diets is also considerable and often crucial, but largely hidden from urban and official eyes. Forest foods add not only calories but also necessary protein and micronutrients to the diets of rural people. The importance of forests' direct contribution to diets and incomes may be eclipsed by their inputs to human well-being outside forests. Focusing on food, much more needs to be understood about the environmental services that forests provide to various types of agriculture, including the regulation of water flow and quality, mitigation of climatic extremes, provision of pollination services and germplasm for crop improvement, maintenance of nutrient cycling and soil fertility, control of agricultural pests and diseases, and other essential functions. These services are critical to the maintenance of most agricultural systems, including the most modern agribusinesses, but are seldom valued until they are lost. Knowledge of how forests can be managed to simultaneously optimise production of foods and environmental services is also little understood and thus little valued. Without proper attention to these issues, the importance of forests to human well-being will continue to be undervalued, ignored, and diminished, increasingly irreparably.

Forests support food security

There is general agreement about the importance of forests. As other speakers today have said, it is important to preserve forests despite the fact that we need to increase food production.

Putting a different spin on that concept, this paper says we need to preserve forests *because* we need to increase food production. The reason is that a large amount of agricultural production and a large amount of the other food that people — especially the most vulnerable populations on the globe — use and depend on, actually depends on forests.

Usually, agriculture and forest conservation are presented as antagonists. For a poor country that is grappling with extremely high food prices but has extensive forests in its territory, it might seem that the most reasonable — and perhaps the only — solution to that situation is to clear the trees. Again, for a developing country that wants to step up to become a richer country, and that has an opportunity to use large areas of its land to grow valuable food crops, it might also seem that clearing the forest is the best solution. In situations like those, food security and conservation of forests seem to be a zero-sum game. For many many major countries this is not a theoretical question but an actual dilemma. Countries that have faced this dilemma in the past, or are facing it now, include Indonesia, Brazil, Peru, the Democratic Republic of Congo, and many others throughout the tropics. They try to come to a decision about it in very different ways. How and where those decisions are made has a lot to do with both the conservation of forests and the conservation of environmental values, and also with the conservation of our ability to keep on producing food.

This kind of dichotomist discourse appears also beyond those countries' borders, in the international arena. However, this paper aims to show that, wherever it takes place, it is a very narrow and limited view of what is possible. Instead, we really need to understand that there is no necessary dichotomy; agriculture and forest conservation need to come together because food security now and in the future actually depends on forests being conserved.

As you will have heard particularly during 2011 the United Nations International Year of Forests, deforestation rates are still high and degradation rates are also still high. The good news is that there has been a significant decline in global net rates of deforestation. That net decline in changes in forest cover is largely due to the expansion of planted forests. There are several issues here: one is that some of those planted forests will not have all the qualities that can be expected to come from more natural





forests or little disturbed forests. Another problem is that there are increased pressures on those forests, such as for expansion of agricultural production or other land uses that many countries are now developing.

There are very large and interesting differences regionally in the rates of deforestation — that is, the rates at which net deforestation is coming down or not — and also in the causes of those different rates of deforestation. Details are available at the CIFOR website¹. Nevertheless, the fact that deforestation continues at all shows that the true values of forests have yet to be understood, and particularly that the true value of forests in relation to food security is still to be appreciated.

The reality is that at least a billion people in the world depend on forest resources for their daily needs. A billion people is every seventh person on Earth, and among those people who depend most directly on these resources are some of the people who are the most vulnerable, whether because of the



¹ www.cifor.org

countries or regions in which they live, or because of gender, or because of various other issues. Many of these billion people are members of indigenous groups, and many of them are minorities in the countries in which they live. Cutting down their forests in the name of greater food production would actually hurt the nutritional status of many of these people and have long-lasting negative effects on their agriculture and on their other resource use.



Benefits of forests overlooked

Preliminary results from a six-year CIFOR study that just ended, called PEN, the Poverty and Environment Network, give us a glimpse of the importance of forests for livelihoods. The CIFOR website and publications are progressively reporting the results of the PEN study, which seems to be the largest of its kind so far. The study involved 50 research partners in 364 communities around the globe, and recurring research over time with about 8000 households.

For households that are located near or within forests — which includes a surprising number of areas of the globe — the preliminary research shows that forest income contributes more than 20% of their total household income, and that is just in areas that are classified as forest. Adding in other environmental income, such as from products of areas that are largely natural but not necessarily classified as forests, that proportion rises to more than 25% of total household income. Now 25% may not seem overwhelmingly important, but for those communities and those households it is actually more than they get from planted crops.

Also within this global data set there is information about sources of income for women and ways of providing income to the people who are the most vulnerable. For example, consider Burkina Faso, one of the poorest countries on the planet and an area quite typical of dry West Africa. Women in Sissili Province there have few sources of direct income, and, in contrast to some





of the income that men bring into the household, women's incomes tend to go towards feeding the family (Thomas et al. 1990; Duflo & Udry 2004). In three case-study villages, women derived 53% and 46% of their usable income from forest products in two of the villages, and 12% in the third village. These data show that within the global picture of 25% of income from forests and forest-like areas there are some more localised examples of people for whom forests provide much more than a quarter of their daily needs.

Why are important forest-based contributions such as these not valued? One reason is that many of the existing tools for assessing poverty, including statistics on an international level and many of the numbers generated by the World Bank, actually do not capture the importance of these forest products. Much of the activity of people who live near forests, actually inside or at the edges of these forests, falls between the conventional definitions of what is agriculture, what is forestry, what are forest products, what is food. Therefore they tend not to enter into national or international statistics. Many of the forest people and their livelihoods are really quite inscrutable and invisible to those who gather national and international statistics. This means their importance tends not to be understood, and they tend not to figure in the policy decisions that are made, either at national or at global levels.



Forests need to be valued. Food security means satisfying not just the need for calories but also the need for nutritious diets. Stunting of children occurs not because they have too few calories — in many areas calories are actually not a problem — but because they lack micronutrients. The deficiencies are in vitamins and in proteins. Our current studies show that for a majority of children under five in 21 African countries, there is a positive correlation between the percentage of tree cover in their communities and their dietary diversity (Ickowitz et al. pers. comm.). Millions of children around the world go blind every year from lack of vitamin A (WHO 2003, 2012); yet forest products supply that essential need. Vitamin A and iron are among the important micronutrients that come largely from the forest for many communities (Golden et al. 2011; Powell 2012). That is true not only for remote rural communities, but also for many other areas including some newly urbanised places.



Another forgotten but important forest product is bush meat. Five to six million tonnes of bush meat are eaten annually in the Congo Basin, and



that is roughly equivalent to the total amount of beef produced each year in Brazil (Nasi et al. 2011). It is produced in the Congo without the deforestation that occurs in Brazil. For many communities this is up to 80% of their intake of protein and fats. That is something that is hardly heard about — instead we hear about the criminalisation of hunting — but bush meat is extremely important locally.

Yet, the services that forests provide to agriculture completely eclipse these direct food subsidies that come from forests. Forests provide water services, by regulating and filtering water. They provide pollination services and temperature regulation, both on a global scale and on a local scale. The latter is especially vital in the face of climate change. They produce aquatic resources — consider how many aquatic resources come out of floodplain forests and out of mangroves — and genetic resources, and so forth; the list goes on. We still know very little and understand very little about these services.

So, what can we do to address food and income security while also protecting forests, understanding that without forests probably we will have less secure food supplies?



Integration and governance

Obviously, there is no ‘silver bullet’. Agricultural intensification on land that is already under cultivation is essential. Sustainable increases will demand all kinds of improved practices, but just sustainable increases, sustainable intensification on limited areas of land, are probably not enough. A landscape approach, which looks at food production over an entire diverse landscape that includes forest, is the most promising way forward. Investments in agriculture must be coupled with improvements in forest use and governance.

Good forest governance is key. If areas are going to be cut down it is extremely important to involve the people who live there and own those forests or use those forests. It is vital also to take into account the environmental services that forests provide to global agriculture and society at large.



Forests and forest lands are more than trees, and forests represent more than just land for agricultural expansion. Keeping forests as forests within diverse functional and productive landscapes is a challenge that we all face. It is essential that we win that challenge if we are to maintain the services that forests provide, including both direct and indirect contributions to food security.

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