



Key research findings

Forests, food and livelihoods

What policymakers should know

- **Food security:** Forests are natural supermarkets for 1 billion of the world's poorest people. They provide nuts, berries, roots, meat and cooking fuel, complementing agricultural crops and providing essential nutrients that would otherwise be unavailable.¹ In rural areas of the Congo Basin, five to six million tonnes of bush meat are harvested each year and account for up to 80 percent of the fats and proteins consumed by local communities.² In areas where fish are an important source of protein, forests—especially mangroves—support the healthy aquatic ecosystems necessary to maintain fish stocks.
- **Livelihoods:** New global research by CIFOR has shown that environment-related income makes up about one-quarter of total household income for people living in or near forests, a value comparable to what these households derive from agricultural crops.³ This and other research⁴ demonstrates how the contributions of forests and agriculture to food and livelihood security are complementary.
- **Vital for agriculture:** Forests provide goods and services that support the agricultural sector. Livestock production benefits from the fodder and shade provided by forests and trees. Forests provide homes for bees, bats, and other pollinators of agricultural crops. Coffee cultivated in the fields furthest away from forested areas has been shown to have lower yields due to reduced pollination services.⁵ Forests provide hydrological services to agriculture, moderating the quantity and quality of surface water available for irrigation, and controlling the sedimentation of irrigation infrastructure.⁶
- **Safeguarding biodiversity:** Natural forests provide habitat for the wild relatives of many important tree crops, a source of genetic diversity that will become increasingly important for these species to adapt as climate change advances, and for humans to adapt to climate change as well. Our diet once included more than 7000 species of plants and animals, but today it contains fewer and fewer species.⁷ This limited biodiversity in our food sources makes us more vulnerable to the onset of new pests and diseases brought on by climate change.
- **Empowering women:** In many cultures, non-hunting gathering and harvesting of food is the responsibility of women. Easy access to forest-derived foods decreases the time and effort women have to spend to ensure their families have adequate nutrition. There are many flow-on benefits for women and their households.⁸

Notes

- 1 Arnold, M. *et al.* 2011. Editorial: Forests, biodiversity and food security. *International Forestry Review*, 13 (3): 259–264.
- 2 Nasi, R., Taber, A. and van Vliet, N. 2011 Empty forests, empty stomachs? Bushmeat and livelihoods in the Congo and Amazon Basins. *International Forestry Review* 13(3): 355-368.
<http://www.cifor.org/nc/online-library/browse/view-publication/publication/3580.html>
http://www.cifor.org/publications/pdf_files/articles/ANasi1101.pdf
- 3 Average share in a sample of 8000 households in 24 countries, included in CIFOR's Poverty and Environment Network study.
<http://www.cifor.org/pen>
- 4 See papers in *International Forestry Review*, 13(3), 2011.
- 5 Ricketts, T., Daily, G., Ehrlich, P. and Michener, C. 2004 Economic value of tropical forest to coffee production. *Proceedings of the National Academy of Science of the United State of America* 101 (34): 12579–12582.
<http://www.pnas.org/content/101/34/12579.full.pdf>
- 6 Vignola, R. 2005 Tropical forest adaptations to climate change. CATIE, Costa Rica.
- 7 Sunderland, T.C.H. 2011 Food security: why is biodiversity important? *International Forestry Review* 13(3): 355-368.
<http://www.cifor.org/nc/online-library/browse/view-publication/publication/3577.html>
http://www.cifor.org/publications/pdf_files/articles/ASunderland1101.pdf
- 8 Ickowitz, A., Powell, B. and Sunderland, T. Forthcoming. Forests and Child Nutrition in Africa; Powell, B. 2012. Biodiversity and human nutrition in a landscape mosaic of farms and forests in the East Usambara Mountains, Tanzania. PhD thesis, School of Dietetics and Human Nutrition. Montreal, Canada: McGill University.

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