



FAO/G. NAPOLITANO

## Forests and trees outside forests are essential for global food security and nutrition

*Summary of the International Conference on Forests for Food Security and Nutrition*

FAO headquarters, Rome, Italy,  
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The International Conference on Forests for Food Security and Nutrition was organized by FAO in partnership with Bioversity International, the Center for International Forestry Research, the World Agroforestry Centre and the World Bank.<sup>1</sup> This technical meeting was attended by more than 400 participants, comprising experts from governments, civil-society organizations, indigenous and other local communities, donors and international organizations in more than 100 countries, who made a wide range of important points, many of which are summarized below.

This summary and the recommendations therein were developed by the conference organizers and do not necessarily represent the position of the member states of FAO.

<sup>1</sup> The conference was sponsored by the Department for International Development of Great Britain and Northern Ireland, the German Federal Ministry of Food, Agriculture and Consumer Protection, the Norwegian Ministry of Agriculture and Food, the United States Forest Service, the World Agroforestry Centre and the World Bank.

*Participants attend the opening session of the International Conference on Forests for Food Security and Nutrition at FAO headquarters in Rome, Italy*

### KEY MESSAGES

- The role of forests and trees outside forests<sup>2</sup> in the fight against hunger demands much greater attention and should be integrated with strategies for food security and nutrition.
- Food security is grounded in diversity – in terms of biota, landscapes, cultures, diets, production units and management. Forests and trees are critical for maintaining that diversity.
- The ecosystem services provided by forests and trees make essential contributions to forest-dependent communities and agriculture by, among other things, protecting soil and water, maintaining soil fertility, regulating the climate, and providing habitat for wild pollinators and the predators of agricultural pests.

<sup>2</sup> As used in this summary, the term “trees outside forests” encompasses agroforestry systems, other trees on farms, and trees in non-forested rural and urban landscapes.

**KEY MESSAGES** (continued)

- Forest foods and tree products have been important components of rural diets for millennia and today provide essential nutrition for millions of people. More than one-third of the world's people rely on woodfuel for cooking.
- Forests, trees outside forests and the sustainable management of these resources are crucial for ensuring the resilience of food-production systems in the face of climate change and economic, social and political instability. Forest- and tree-based sources of income can contribute to building resilience.
- There are opportunities to use more forest species, especially plants and insects, for the large-scale production of food products. However, deforestation and forest degradation risks the loss of many such species.
- The single biggest cause of forest loss is agricultural expansion, but there is potential for both increasing agricultural

production and protecting forests, including through the restoration of degraded forest land, the greater use of trees in agriculture, and the alignment of policies and institutional frameworks to that end.

- Secure land and forest tenure and more equitable access to resources for local communities and women will encourage sustainable forest- and tree-based approaches to food security and nutrition.
- There is a need to retrieve, document and make better use of traditional knowledge and to combine it with scientific knowledge to increase the role of forests and trees outside forests in food security and nutrition.
- Women often have specialized knowledge of forests and trees in terms of species diversity, uses for various purposes, and conservation and sustainable management practices, but the role of women in ensuring the food security and nutrition of forest-dependent communities is underappreciated.

- Greater collaboration at the national and international levels is needed to improve data collection on, and the communication, reporting and monitoring of, the contributions of non-wood forest products, forest ecosystem services and other forest- and tree-related aspects of food security and nutrition.
- Training in the management of sustainable forest enterprises can help forest-dependent communities, particularly women and youth, to gain access to equitable value chains, such as those applied in fair trade, thereby improving the food security and nutrition of such communities and helping them to capitalize on their traditional knowledge.
- Governments, civil society, indigenous peoples, bilateral and multilateral development assistance agencies, the private sector and other stakeholders are invited to strengthen the contributions of forests and trees outside forests to food security and nutrition through a number of feasible actions, listed in the recommendations below.



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**THE BENEFITS OF FORESTS, TREES OUTSIDE FORESTS AND AGROFORESTRY**

Globally, millions of people depend on forests and trees outside forests for their food security and nutrition – directly through the consumption and sale of foods harvested from forests and trees outside forests, and indirectly through forest-related employment, forest ecosystem services, and forest-based biodiversity.

Forest foods and tree products, such as leaves, seeds, nuts, honey, fruits, mushrooms, insects and game animals, have been important components of rural diets for millennia. The wide range of medicinal plants found in forests contributes to the health and

*A woman in Guinea walks past a mature *Parinari excelsa*, an evergreen forest tree with rough-skinned, edible fruit. Globally, many millions of people depend on forests and trees outside forests for their food security and nutrition through the consumption and sale of foods harvested from forests and trees outside forests and through forest-related employment, forest ecosystem services, and forest-based biodiversity*



**Fishermen in Nagapattinam, Tamil Nadu, India, sit on an upturned boat after the 2005 tsunami. There is strong evidence that forests help protect coastal areas from flooding, thereby increasing the stability of food production on coastal lands, and they also act as sources of employment and provide food in the wake of such disasters**

well-being of forest-dependent people and forms the basis of many pharmaceutical products now produced globally. Forests and trees outside forests are important sources of fodder for livestock, especially in drylands. The genetic diversity in natural forests offers huge potential for the discovery, development and improvement of new sources of food and medicine, among others.

There is enormous potential to use more forest species, including plants and insects, for the large-scale production of foods. Many forest foods and tree products have extremely high nutritional value.

The ecosystem services provided by forests and trees outside forests make important contributions to agricultural production and forest-dependent communities, such as by protecting water and soil resources, contributing to soil development processes, increasing soil fertility, regulating climate and providing habitat for wild pollinators and agricultural pest predators.

Forested wetlands and mangrove forests help protect coastal areas from flooding, thereby increasing the stability of food production on coastal lands. Forests also play

vital roles in riverine and coastal fisheries, which are often particularly important in poor communities. Mountain forests perform essential ecosystem services, such as the provision of high-quality water for downstream communities and their agricultural activities.

Forests and trees outside forests are important sources of food and income, especially for the poor and women, and may be key in times of economic, political or ecological crisis. The presence of forests and trees outside forests increases ecosystem

resilience and the capacity of people to meet their nutritional needs.

An estimated 2.6 billion people rely on woodfuel, including charcoal, for cooking. The use of wood as a source of energy is vital for local economies and for maximizing the palatability and nutritional value of foods that require cooking.

A wide range of agroforestry systems, including agrosylvopastoral systems, is available to support food security and nutrition through the direct provision of food, by raising farmer incomes and providing fuel for cooking, by improving soils and thereby increasing agricultural productivity, and through the provision of other ecosystem services.

Indigenous peoples and other local communities hold an immense wealth of traditional knowledge on the cultivation, harvesting and preparation of forest foods and tree products and on sustainable land management. Traditional forest-agriculture landscapes tend to have high resilience in the face of environmental and social perturbations.



**Beekeepers near Kigoma, the United Republic of Tanzania, harvest honeycomb from a hive. Forest foods and tree products, such as honey, have been important components of rural diets for millennia**

### KEY CHALLENGES AND BOTTLENECKS

The many contributions of forests and trees outside forests to food security and nutrition are usually poorly reflected in national development, agricultural, and food security and nutrition strategies, and there is often a lack of long-term funding to ensure the success of projects to promote sustainable forest management and agroforestry. Many land-use planning strategies, often developed without the participation of affected people, and large-scale agriculture investments, have undermined smallholder farmers by excluding them from emerging value chains, inadvertently creating competition for resources, and limiting the capacity of smallholders to cope with climatic risk, pests, and the uncertainty of market demand. Globally, agriculture is the main cause of forest loss.

In many places, forest foods and tree products are being overharvested. For example, the overexploitation of wild meat is a serious issue in some forests in Africa. Poorly implemented land-use actions associated with, for example, unsustainable logging, mining and agriculture can have cumulative effects that cause the impoverishment of land and local communities. Land and forest degradation contributes to food insecurity and is associated with increased rates of child mortality. As people become more food insecure, their capacity to innovate is hindered, further exacerbating their food insecurity. Those who are food insecure are more likely to deplete and mine natural resources unsustainably.

If the technology is inefficient, the use of wood for cooking can cause severe health problems related to indoor air pollution and may also generate significant greenhouse gas emissions. In the absence of proper management and distribution systems, the collection of fuelwood can be a disproportionately high burden for women and children, but it can also be an important source of income. In some

areas, the harvesting of wood for energy is a major driver of forest degradation.

Agricultural practices should take into account the economic, social and environmental pillars of sustainable development. The environmental costs of agricultural practices are often ignored. Along with unbalanced subsidies, this can make agriculture more profitable than the sustainable management of forests and agroforestry systems but can lead to unsustainable agricultural practices.

Research is lacking on forest biodiversity with potential importance for food security and nutrition. Moreover, there is a risk that traditional knowledge of forest foods will be lost, or will be exploited by outsiders who obtain most of the commercial benefits of this knowledge. Local traditional knowledge is often ignored in conventional approaches to land-use planning, development and management, which tend to reduce biodiversity and lead to a corresponding loss of resilience.

There is a lack of knowledge and data to support effective policy-making on (among others): the role of non-wood forest products (NWFPs), wildlife and forest ecosystem services in food security and nutrition and the realization of the right to food; labour and decent employment in the forest sector, especially the NWFP subsector; the role of forests and trees in urban food security and nutrition; mountain forests and their role in

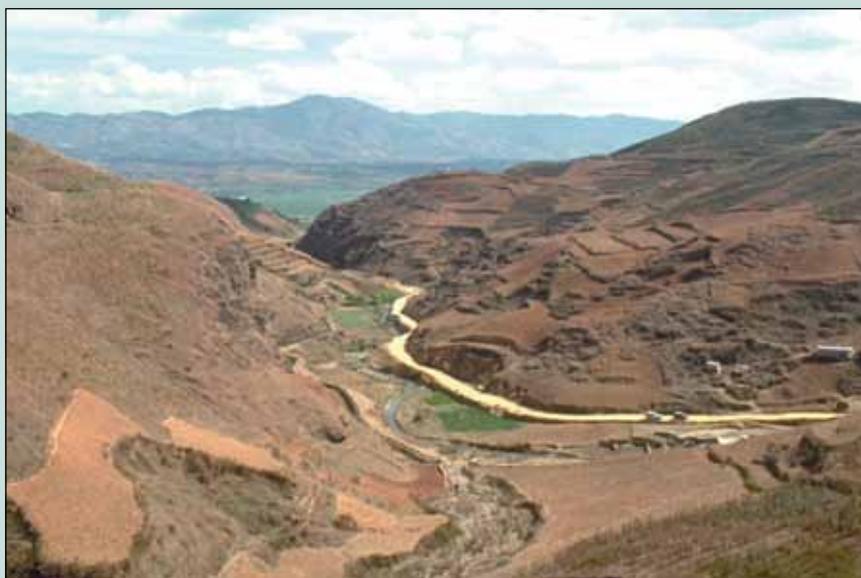
food security and nutrition; and the socio-economic circumstances of forest-dependent people. Moreover, there is no internationally agreed framework (or formats) to guide the collection, reporting and dissemination of data on the use and trade of NWFPs, wildlife and forest ecosystem services important for food security and nutrition.

Women often have specialized knowledge of forests and trees in terms of their species diversity, uses for various purposes, and management and conservation. Compared with men, women's knowledge tends to be linked more directly to household food consumption and health and is particularly important during food crises. However, the role of women in forestry value chains is often poorly supported by policy-makers and service providers.

### POLICY OPTIONS, PRACTICAL INNOVATIONS AND EMERGING OPPORTUNITIES

The potential economic, social and environmental gains from secure land tenure are substantial and can lead to fundamental improvements in land management. The recent endorsement of the Voluntary Guidelines for the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security by the Committee on World Food Security, coupled with the Voluntary Guidelines to Support

*Steep agricultural fields in a highly degraded landscape in southwest China. Deforestation and unsustainable land management can have cumulative effects that cause the impoverishment of land and local communities*



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**Workers in Indonesia harvest rice. A landscape approach to management with a strong ecological basis can increase the capacity of people to produce, harvest and buy food in the face of social, economic and environmental shocks and stresses**

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the Progressive Realization of the Right to Adequate Food in the Context of National Food Security, provide a basis for progress in this area.

Sustainable forest management is a broad and evolving concept for ensuring the sustainable use and conservation of forests while generating benefits for local people, including increased food security and nutrition.

A landscape approach to natural resource management that addresses the economic, social and environmental pillars of sustainable development can help ensure the sustainable management of forests and trees outside forests in a broader context. Such a systematic approach with a strong ecological basis can increase the capacity of people to produce, harvest and buy food in the face of social, economic and environmental shocks and stresses. This focus on resilience can contribute to the long-term achievement of food security. The active participation of all stakeholders, including the economically marginalized and socially excluded, in sustainable land management, benefit-sharing and decision-making is crucial.

Policies that improve rights of use and access to land, forests and trees could create significant incentives for small-scale

farmers to adopt agroforestry systems and ensure the recognition of agroforestry as an investment option. Investments that support smallholder agroforestry ventures in marketing their products and ecosystem services, including through fair-trade initiatives, are yielding encouraging results for both investors and producers. Microfinance loans to small and medium-sized forest enterprises have been shown to lead to rises in family incomes in rural areas and to increases in health, nutrition and quality of life, especially when such microloans are made to women. In many cases, producer associations designed to meet the needs of smallholders and marginalized and excluded people have had a significant impact on improving livelihoods. The Committee on World Food Security is developing principles for responsible agricultural investments in the context of food security and nutrition.

REDD+ initiatives can help in the recognition of the forest rights of indigenous peoples and other local communities, although income from such initiatives has not yet proved sufficient to sustain forests financially. Initiatives to promote sustainable development and food security and nutrition through sustainable forest management

and the introduction of trees and shrubs and by supporting farmer-managed natural regeneration are also promising. In a number of countries, schemes to share forest-related revenues more equitably are improving the food security and nutrition of the poor.

Decent employment in forestry is an important means of improving food security and nutrition for people who rely on forests for their livelihoods. A sustainable approach would look at creating more high-skill jobs in the forest sector and upgrading existing ones to increase income and productivity and make working conditions safer and more stable. This, in turn, will help improve the availability of, access to and consumption of food in terms of calories, and increase the quality of food in terms of variety, diversity, nutrient content and safety. Small and medium-sized forest enterprises and community-based forest management have huge potential to provide employment in forest communities and can be especially important for women.

Strong rural institutions can help ensure the contribution of forests and trees outside forests to the food security and nutrition of rural communities. The commitment and capacity of governments to engage openly with rural communities is required.



FAO/A. CONTI

*This wooded area in the communally owned and managed Ejido Canalejas de Otates in Mexico contains useful timber and provides shelter and fodder for livestock. Broad, intersectoral partnerships are needed to promote the sustainable use of forests and trees outside forests by rural communities to contribute to the achievement of food security and nutrition*

## RECOMMENDATIONS

Governments, civil society, indigenous peoples, bilateral and multilateral development assistance agencies, the private sector and other stakeholders are invited to strengthen the contributions of forests and trees outside forests to food security and nutrition by:

1. Participating in broad partnerships to promote the sustainable use of forests and trees outside forests by rural communities to contribute to the achievement of food security and nutrition.
2. Ameliorating conditions that currently keep forest-dependent people in low-status and low-productivity jobs.
3. Providing access to resources by indigenous peoples and other local communities and marginalized people by, for example, applying the Voluntary Guidelines for the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security.
4. Creating, as appropriate, and strengthening rural community-based institutions and increasing social dialogue and representation with the aim, among other things, of improving access to knowledge, finance, markets, better prices and technologies for local people and their equitable involvement in decision-making and recognizing the rights, roles and responsibilities of communities as stewards and beneficiaries of forests and wildlife.
5. Eliminating all forms of discrimination in forests and promoting equal opportunities for youth, women and men and the protection of the rights of indigenous peoples and other local communities, including the right to free, prior and informed consent and the right to territory.
6. Reviewing all relevant laws, policies and actions so that they uphold the food-related rights set out in the Universal Declaration of Human Rights, the Covenant on Economic, Social and Cultural Rights and other relevant treaties and documents, and so that, among other things, they: do not violate the right to food; protect citizens from such violations; provide mechanisms to ensure that marginalized and excluded forest-dependent communities have access to justice if such violations occur; and provide for concrete possibilities to enable people to feed themselves, including through the use of forests and trees.
7. Protecting forests and seeking ways in which agricultural production can be expanded without the loss or degradation of forests, such as through the restoration of degraded forest lands and the greater use of trees outside forests as a means of intensifying agricultural productivity.
8. Taking an integrated approach to food security and nutrition so that relevant sectoral policies, including those on agriculture, forests, trees, wildlife and food security and nutrition, have well-defined objectives, targets and time frames for their implementation and are coordinated intersectorally, and that all stakeholders, from forest-dependent communities to all relevant ministries, are involved actively in their development, implementation and monitoring.
9. Encouraging spatial land-use planning that takes into account the many important roles of forests and trees outside forests in food security and nutrition.
10. Encouraging intersectoral cooperation to promote the sustainable management of forests and trees outside forests at the landscape scale, include forests and trees outside forests in resilience strategies, and investigate the lessons from sustainable forest management that could be applied to achieve sustainability at the landscape scale.
11. Supporting sustainable wildlife management as a source of food with scientific, technical and traditional knowledge, balancing the economic, social and environmental values of wildlife for present and future generations.
12. Increasing opportunities for green jobs and improving conditions for forest workers, especially the most vulnerable, and integrating decent employment concerns in forest and other natural resource policies and programmes.
13. Encouraging the development of markets for forest ecosystem services, such as the provision of clean drinking water and other innovative financing mechanisms to support the role of forests and trees outside forests in food security and nutrition.

14. Promoting long-term investments in forests and trees outside forests to build resilience so that food aid is less necessary.
15. Training institutional staff on gender issues, involving women in monitoring, reporting and verification activities, and developing a gender-sensitive intersectoral global roadmap for forests and trees outside forests.
16. Making better use of traditional knowledge about natural resource management and working with local stakeholders to improve the management of wild forest foods to ensure their sustainability.
17. Increasing the efficiency of biomass-based cooking systems through integrated approaches that take into account both the woodfuel production chain and the woodfuel conversion chain.
18. Supporting the development of entrepreneurial, financial and planning skills among small-scale forest producers to encourage their participation in, and maximize the remuneration they receive from, market-oriented activities in agroforestry, tree-growing, NWFPs, small-scale wood processing and the provision of ecosystem services.
19. Supporting the development of producer associations to assist them to gain access to markets and receive equitable benefits from forests, including through local added value.
20. Collaborating nationally and internationally to improve data collection, reporting and monitoring of NWFPs, forest ecosystem services, forest wildlife and other forest-related aspects of food security and nutrition.
21. Encouraging research that supports the sustainable use of wild forest species of plants, as well as insects and other animals, to improve yields and increase the sustainability of food production.
22. Establishing transparent and inclusive platforms for the dissemination and exchange of knowledge and experiences and to build awareness of the importance of NWFPs and forest ecosystem services,

the socio-economic circumstances of forest-dependent people, and the role of forests and trees outside forests in food security and nutrition, with a strong emphasis on robust data.

23. Creating incentives for greater collaboration between scientific disciplines, government sectors and rural institutions to synthesize scientific data and traditional knowledge on the role of forests and trees outside forests in food security and nutrition.
24. Supporting efforts and investments to communicate knowledge on the role of forests and trees outside forests in food security and nutrition in accessible, compelling formats to key stakeholders, including civil society, rural institutions, scientists and policy-makers.
25. Recognizing and celebrating the cultural value, emotional connection and public appeal of forest foods and tree products to rural and urban communities with a view to leveraging political will and public support for practices and policies that support the sustainable management of

these resources and their contributions to food security and nutrition.

26. Developing indicators, tools and methods of data collection for food security and nutrition that incorporate forests and trees outside forests and the concerns of women and youth, and develop the necessary capacity.
27. Developing safeguard mechanisms to ensure that the full impacts of forest conversion and other activities such as mining on food security and nutrition are taken into account.

Conference participants encouraged all stakeholders to use this summary to attract greater attention to the role of forests and trees outside forests in food security and nutrition. They further encouraged the FAO Forestry Department to present this summary to the Committee on World Food Security and the Committee on Forestry, and to other important fora, including the Second International Conference on Nutrition (ICN2) to be held at FAO headquarters in Rome on 19–21 November 2014. ◆

### What policy-makers need to do

**FAO has developed a brief for policy-makers based on this conference summary and other outcomes of the International Conference on Forests for Food Security and Nutrition. The brief makes the following five strategic recommendations:**

- **Provide secure land and forest tenure and equitable access to resources by applying the principles outlined in the Voluntary Guidelines for the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security.**
- **Develop mechanisms for coordination across the agricultural, forestry, livestock, fisheries, energy, mining and other relevant sectors to ensure stronger coherence of food security and nutrition interventions and better policy alignment.**

- **Promote policies that increase access by smallholders to credit, technology, extension services and insurance, as well as to markets for their forest and tree products and ecosystem services.**

- **Achieve gender equality in the formulation, implementation and evaluation of food-security, nutrition and poverty-alleviation policies and investment strategies.**

- **Strengthen mechanisms for the collection and timely dissemination of data on the contribution of forests and trees to food security and nutrition for use in policy-making.**

*Towards food security and improved nutrition: increasing the contribution of forests and trees, a brief for policy-makers, can be downloaded at [www.fao.org/forestry/food-security/en/](http://www.fao.org/forestry/food-security/en/).*