The contribution of forestry to food security

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Forestry and food security... (FAO)

Forestry has a significant and indispensable role to play in improving present and future food security. Although a great deal remains to be understood about the specifics of this role, it is clear that foresters must make food security a basic consideration in policy formulation, as well as in planning, design and implementation.

Food security is defined as physical and economic access to food, for all people, at all times. It is a complex concern. By the end of 1989, approximately 552 million people went to bed hungry. Moreover, trends show populations growing, and in many regions resource distribution is increasing and large-scale destruction of productive resources. Even conservative estimates predict that without concerted efforts to reverse this trend, the world will experience undersupply and will see starvation on a yet unknown scale in times of periodic drought or crop failure.

Trees have been an integral part of the food security strategy of many rural peoples for a long time, but it is often been neglected in the planning of forestry activities. Even more disturbing, agricultural practices have often been destructive, and sometimes subtle, as farmers may be too concerned over providing the daily food to become interested in planting trees. This false dichotomy is perhaps based on the outdated view that forestry is concerned only with raising timber trees on government lands and that agriculture only involves growing crops in open fields. In fact, farmers have long recognized the importance of trees. They almost invariably incorporate trees in production systems in areas where they have lived for an extended period of time (Sime, 1985; Hope, 1985; Nair, 1988). Inquiry into current and past farming practices has clearly shown that rural people have a wealth of knowledge as to which trees make agricultural crops grow more successfully, which provide fodder during dry seasons, and which help to hold soils for more successful farming on sloping land, etc.

Thus, tree and forest resources contribute to food security by ensuring physical access. In coastal waters use the mangrove as nursery grounds (Krishnamurthy, 1984). Under special circumstances, trees also have a role in supporting fisheries, thus ensuring economic access. In the Yemen Arab Republic a windbreak of casuarina protects a grove of citrus trees from wind damage. In Argentina, Chinese, India, the Niger, Papua New Guinea and Tunisia, the use of trees as shelters belt has resulted in increases in grain production ranging from 30 to 210 percent. In Argentina, China, India, Mauritania, the Niger, Senegal and other countries, trees are being used to stabilize dunes and protect soils from being blown away.

One of the most important direct contributions of the forest to food supply is wildlife. In many areas, small rodents, reptiles, birds, snails and insects, as well as larger animals, make up a much more important part of the diet than is generally realized. For example, communities living near a forest in Nigeria obtain 85 percent of their animal protein from bushmeat. In Ghana, approximately 75 percent of the population consumes wild animals regularly. In Liberia 70 percent, and in Botswana, 60 percent (FAO, 1988).

Trees also provide essential nutrients and medicines that increase the nutritional impact of other foods. In many areas, small rodents, reptiles, birds, snails and insects, as well as larger animals, make up a much more important part of the diet than is generally realized. For example, communities living near a forest in Nigeria obtain 85 percent of their animal protein from bushmeat. In Ghana, approximately 75 percent of the population consumes wild animals regularly. In Liberia 70 percent, and in Botswana, 60 percent (FAO, 1988). Among the most important of these is tree pudding, which is obtained from the ripened seeds of the pigeon pea (Cajanus cajan), and is nutritionally very high in protein. Finally, forest plants often provide medicines for livestock diseases (FAO, 1983 and 1985).

In almost all areas of the developing world, wood provides most of the energy for cooking and processing. For example, in the Antilles, up to 90 percent of the wood gathered is used to provide smoke for the heating of coffee and sugar cane. In many areas, small rodents, reptiles, birds, snails and insects, as well as larger animals, make up a much more important part of the diet than is generally realized. For example, communities living near a forest in Nigeria obtain 85 percent of their animal protein from bushmeat. In Ghana, approximately 75 percent of the population consumes wild animals regularly. In Liberia 70 percent, and in Botswana, 60 percent (FAO, 1988).

According to a recent FAO report, many communities depend on the meat of hunted animals. In Nigeria, 80 percent of people who eat small rodents, reptiles, birds, snails and insects, as well as larger animals, make up a much more important part of the diet than is generally realized. For example, communities living near a forest in Nigeria obtain 85 percent of their animal protein from bushmeat. In Ghana, approximately 75 percent of the population consumes wild animals regularly. In Liberia 70 percent, and in Botswana, 60 percent (FAO, 1988). The importance of hunting as a source of protein is underscored in the following results:

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Economic access to food

Strategies for forestry and food security

Options and possibilities for multipurpose management of forest resources, rising tree crops and adding value through processing. Some evidence for ways of integrating forestry and food security to improve the livelihoods of the poor, Extensionists will need to work with police, community leaders, and the people who are the primary beneficiaries of the project.

The real challenge for foresters is to ensure that forestry programmes and activities are supported by policies, planning and implementation that enable them to be as relevant and appropriate as possible in ensuring economic access to physical and economic food to all people at all times. In order to promote better understanding and more effective documentation of this topic, the Government of India hosted an FAO Expert Consultation on Forestry and Food Security in 1988. This meeting, the first of its kind, brought together 57 specialists in such varied disciplines as forestry, soil science, agronomy, economics and hydrology. The participants came from 27 countries, covering all major regions of the world, and they assured that the presented materials, views and conclusions drawn constitute the world’s best possible range of perspectives and experience (FAO, 1988).

Economic Access to Food - Harvesting, processing and needs in India

Policy and institutional approaches

Policy approaches suggested by both groups referred above to address the integration of food in forestry activities in such an identifying as an opportunity. If forestry is to be effective in meeting the food and income needs of the poor, it must be clearly seen as a policy document, along with a commitment to working in partnership with local people. The Expert Consultation suggested that existing forest policy orientations be reviewed, particularly with regard to the following:

- “changing policy measures which protect the least-developed countries from overuse or over-exploitation of forest resources”;
- “legal and other policy measures that discourage tree-grown growing of forests with market or other incentives and measure (including tree tenancy arrangements)” which promote more effective use of tree resources among farmers;
- “making provisions for strengthening the negative impact of large wood-using industries on the local environment and local people”;
- “making definitions in forest laws to recognize the needs for local food and clothing and to extend their investment in food and income-generating activities based on the forest (FAO, 1988)”.

Ideally, policies should:

- increase the benefits derived from forests at both the national and international levels;
- ensure that the forest and the central government of the world’s major regions and other stakeholders to support the strengthening of forest security through forestry; appropriate incentives will need to be used to encourage them to act on this role. More women will have to be employed in these institutions to work with local women: the development of gender-sensitive policies will be necessary.

Trends in food security are modified to order the necessary skills, tools and approaches to both centrally based professionals and village farmers. Training will need to focus on team approaches to interdisciplinary and holistic planning and thinking: forestry must be developed with a view to the larger context of the lives of rural people, especially the hungry.

Extension is a relatively new field within forestry. Only now are forestry training institutions examining their curricula and making the modifications necessary to include training in extension. Forestry education must avoid approaches to extension that are top-down, single-focus or working through the more efficient: otherwise, the goal of working in partnership with communities to address the food security deficits will not be reached. Extensionists, as well as training and policy-makers, will influence extension approaches and their effectiveness, will need to develop creative and more relevant two-way communication approaches.

In forestry, the need to confront new challenges on topics such as how to counter the potentially negative effects of large-scale forest protection on Indigenous forestry operators on local forest security; how to maximize food production potential from the trees that are found on a sustainable basis; how to harmonize production of wood and non-wood forest products; and how to identify the climate change and food security-related challenges that need to be addressed are essential (Chambers and Leach, 1991).

There are several factors that will be a basis for comprehensive data on food production, climate, and food security: it is important to consider and compensate for any potentially negative impacts on food security which could be brought about by forestry activities resulting in changes of land use or access to resources.

Identify the most vulnerable segments of the population in relation to food security and design them as priority beneficiaries. Food insecurity may affect whole communities, certain families or certain individuals within households. The communities and the individuals within whom they have less access or lesser access of continued access to foods should be identified as priority beneficiaries whenever possible. Nutritional deficiencies and the potential for food insecurity can be examined in considering an area, and the implementation of activities aimed at alleviating food insecurity. Implement projects with the participation of local people. There can be no serious doubt that local people, especially the most vulnerable, are aware of and concerned about food security issues. They are

Forestry and food security - The contribution of forestry to food, landless and the very poor. At the project or activity level, a food security approach to forestry will require new ways of thinking and action. The contribution of forestry to food security through forestry.

Ideally, policies would: increase the overall benefits derived from forests at both the national and local levels; be consistent with the objectives of programmes and policies in other sectors; meet the needs of the poor and other vulnerable groups; be implemented in a participatory manner; and recognize the importance of the forest role in providing livelihoods for local people, especially the hungry.

In both Kenya and Tanzania smallholder farmers are planting large numbers of trees not for timber, but to provide food and income. However, they also suggest a need to re-examine policies and forestry plans, options and possibilities for multipurpose management of forest resources, raising tree crops and adding value through processing. Some evidence for ways of integrating forestry and food security to improve the livelihoods of the poor, Extensionists will need to work with police, community leaders, and the people who are the primary beneficiaries of the project.

The effect of these factors may be manifested in periodic shortages of food or funds. Appropriate species selection will be of major importance.

There is a great need and scope for research on the methods and institutional arrangements that will help strengthen the ability of forestry services to improve food security through forestry. The potential of forestry activities in addressing them should also be considered when assessing an area, and in designing forestry activities.
already engaged in an ongoing effort to ensure themselves and their families adequate supplies of food. They are also likely to be the best informed about their local environment. If a new technology is being suggested and the local people consider it valuable in strengthening their food security situation, they will often willingly adopt it. If the suggested approach does not meet with their support it is either because they do not have adequate information, or there is something wrong with the approach. In either case, project staff must work closely with local residents to address doubts or constraints.

All interventions must be designed with the realization that projects come and go but food security is a long-term, life and death issue for local people. Forestry activities that strengthen food security have a much greater chance of being implemented on a long-term basis, continuing even after the termination of external project support.

5. Ensure appropriate and ongoing assessment, monitoring and evaluation. The achievement of food security goals in forestry projects is unequivocally more difficult to measure than "traditional" objectives concerned with area planted or production per hectare, especially because many of the long-term benefits of a social forestry project may not even begin to become apparent until after the end of the project life. Creative multifaceted approaches may be required. For example, short-term monitoring of the management of existing trees could be conducted, or quick-yielding products adopted that are designed to provide immediate benefits while trees are established. This approach has been adopted for projects in the Republic of Korea, Zambesia rural and India where respective production of mushrooms, papaya, honey and fodder grasses was monitored.

If seasonality in access to food is considered a special problem and project activities include tree planting, intermediate measures to be monitored might include the potential of the species selected to provide food during the "hungry season" whether the most vulnerable groups show an interest in obtaining and planting these seedlings, and whether the local people will be guaranteed access to the food produced. The food from these trees actually used to improved food security for the vulnerable could be measured in later evaluations.

Local people have ways of measuring food security and, when possible, these should be incorporated into the monitoring system. New approaches to participatory assessment, monitoring and evaluation suggest a limited number of key indicators can be identified as benchmarks for management monitoring (see an article on p. 20 by C. Ogden).

LOCAL PARTICIPATION IS ESSENTIAL - discussing project activities in Nepal

Conclusion

Forestry alone cannot and should not be expected to resolve the totality of food security issues. Many of the essential variables in the food security equation, such as access to food, land, training inputs and jobs are determined by forces outside forestry's control. Even within the family unit, access to quantity and quality of foods is often constrained by socioeconomic factors that forestry cannot influence. Forestry can only have a minimal impact when larger factors produce an environment of inequality, or when the productive capacity of the resource base is already overtaxed by population pressure.

However, when policies, customs and productive resources provide a suitable environment, trees and forests play an extremely important twofold role in food security. First, the support role of forests and trees in sustainable agricultural systems is crucial to overall food production. Woody perennial contribute to reducing the risk of annual crop failure; to compensating for seasonal scarcity; and to providing an emergency supply in times of long-term drought or other adverse conditions. This role will continue to be fundamental in ensuring physical access to food.

The second facet of forestry's role in food security, being economic access to food, is increasing rapidly in importance, especially for the landless and rural poor. The income provided through small-scale enterprises involving the collection and processing of non-timber forest products, as well as poles, fuelwood and timber from managed forests or raised on farm or communal lands, is already essential to millions of people in rural areas. As economies become more industrialized and infrastructure supports facilitate transport and marketing, the income provided by forest products will become even more important.

Much is still to be learned about factors such as gender, local knowledge and vulnerability, about organized approaches and even about technology for managing forestry for multipurpose benefits, including the provision of food. As the situation is dynamic, people's different types of dependency on trees and forests are continually changing. Forest policies and planning need to be further tailored to these realities so that forestry is to play its potential role in supporting food security.

However, enough is already known for foresters to take up the challenge, confident that they have relevant contributions to make. With thought and resource, forestry activities can help solve the growing problem of hunger.

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