

The Increasing Recognition of the Role of Forests in Food Security and Nutrition

Dr. Eduardo Rojas-Briales*

Polytechnical University of Valencia, Spain

***Corresponding Author:** Dr. Eduardo Rojas-Briales, Polytechnical University of Valencia, Spain.

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In the wake of increasing attention to the social perspective of forests, its contribution to food security and nutrition has been progressively recognized in the past years. In 2013 an International Conference on this issue was organized at FAO HQ. Following its success IUFRO devoted its annual Global Forest Expert Panel study in 2015 to it [1]. Finally, the Committee on World Food Security (CFS) identified this theme for the annual High Level Panel of Experts report that was later debated in its 2017 session [2].

Global food demand is supplied basically from cultivated (agriculture, livestock or aquaculture) or wild sources (inland and ocean fisheries, hunting and other wild food). While fisheries is an intensively dealt area, hunting and, very specially, the remaining wild food is much less studied and recorded. Wild food comes mainly from forests but as well from other natural areas like shrubs, grasslands, high mountains, wetlands, coastal areas, deserts or even non-cultivated plants in farmlands. Due to the predominance of forests it has been used as a proxy for wild food. One very important forest type in this area are mangroves. As a border ecosystem between the sea and forests it is extraordinary rich for fish and sea food supply.

There are 3 kind of contributions of forests to food security and nutrition:

Direct

The most relevant elements are animal proteins from hunting, inland fisheries and insects, wild plant proteins (fruits from leguminous), carbohydrates (fruits like chestnuts, etc.), fat (e.g. argan oil), vitamins (leaves in Africa, berries and fruits), micronutrient and condiments. The weight of forest related food is very high in forest dependent communities, especially indigenous people. The lack of information in the past and the predominance of caloric intake as indicator for food security has underestimated the real relevance of the direct contribution. SOFO 2014 [3] estimates that around 1% of the global human calories intake comes from forest food. A more qualitative approach focusing on the nutrition value would increase significantly its perceived relevance.

Indirect

Fire wood for cooking most of the food humans eat daily is used by 1/3 of the population, especially in Africa. Forests and shrubs protect and ensure healthy bee populations supporting pollination. Nutrient bombing, natural fertilization of assimilable nitrogen and shelter provided by agro-forestry and silvo-pastoral systems is crucial, especially in the tropics. Shelter provided by silvo-pastoral systems prolongate fodder supply for cattle in drylands. Wood and bamboo are key providers for tools and poles needed in agriculture, grazing or fishing, e.g. for fencing.

A special form of indirect contribution is resilience. Livestock in dry areas needs during draught periods can survive thanks to trees and shrubs as strategic fodder reserves. Income from forests is a crucial security belt for forest dependent communities in order to buy food, especially in dry or other emergency periods. By far, the indirect contribution are much more relevant than the direct one but due to its invisibility in caloric terms is often overseen. It should just be remembered the risks linked to raw meat (Ebola) or fish

consumption (Anisakis), or the development of the brain size and capacity linked to the domestication of fire and its use in cooking or the considerable enlargement of food sources thanks to it.

Environmental services

Despite a part of environmental services could be considered of indirect nature once they are located far from the farm site they should be classified in another category linked to environmental services. The water of the Nile has been filtered in faraway forests of the upper Nile in Ethiopia or Uganda, forests are the source of many still unknown plants with potential interest for breeding, domestication and diversification of our diets in a time of strong reduction of the variety of crops. Finally, forests mitigate climate change as one of the main threats for agriculture.

An additional area still in discussion is the case medicinal plants if they shall be considered food or not but in any case they are crucial for the health of a significant part of Humankind.

Wild food dependency is very high under low levels of development, especially for indigenous people, while later this dependency is weekend and far neglectable in industrial urban societies of the XIXth and early XXth century. When this societies evolve to tertiary ones a tendency can be observed to recover wild food due to health, cultural and fashion considerations. The case of the use of insects as human food is therefore a paradigmatic case [4]. Inertially very relevant as animal protein supply source in the tropical rural population of SE Asia, Central Africa, the Amazon and Central America adding estimated in 2 billion people it has recently started to spread in the most sophisticated cuisine of the developed World. An advantage of that fact is that the negative perception of insect as food in emerging urban societies that could boost food patterns to less healthy and more environmentally impacting food sources could be changed.

Agriculture is the main cause of deforestation in the tropics. Therefor solutions need to be identified and implemented that avoid an undesirable trade between preserving forests vs. ensuring food security. Smart agriculture intensification, agroforestry and silvo-pastoral systems and forest landscape restoration of extensive degraded area are the most promising alternatives. Agro-forestry is especially interesting as it combines both land uses and ensures a more climate and environmentally smart agriculture providing ideal buffer protection to natural forests.

The main conclusions from the recent discussions in the CFS identified addressing tenure rights and participation of local population, gender, domestication of plant species, traditional local and indigenous knowledge, including wild food into forest statistics, forest certification, and forest landscape restoration or revising protected area practices that do no integrate sufficiently local population voice and needs. Overall, policy coherence between the different competing policy areas is identified as one of the most relevant elements of success.

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