



Global
Forum
on Food Security
and Nutrition

Forests and trees provide benefits for food security and nutrition- what is your say?

Collection of contributions received

Discussion No. 87 from 04 to 25 February 2013

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Introduction to the topic

Forests, trees on farms and agroforestry systems contribute to food security, nutrition and livelihoods in several ways, including as a direct source of food, fuel, employment and cash income. They are fundamental to the survival of forest-dwellers, particularly many indigenous peoples, and are important providers of ecosystem services, including maintaining or restoring soil fertility, protecting watersheds and water courses. For most of the year, herders in arid and semi-arid lands depend on trees as a source of fodder for their livestock. As habitat to an estimated 80 percent of the world's biodiversity, forests provide genetic material important for crop and livestock improvement and are home to many pollinator species.

Forests and trees help to mitigate climate change by absorbing carbon dioxide and storing carbon. They can also help to reduce the vulnerability of people to climate change by providing food and other ecosystem services during critical periods of climate driven food shortages.

However the many ways in which forests, trees on farms and agroforestry systems contribute to food security and nutrition are poorly understood, under-estimated and not adequately considered in policy decisions related to food security and nutrition.

In May 2013, FAO, together with its partners will organise the International Conference on Forests for Food Security and Nutrition <http://www.fao.org/forestry/food-security> to increase understanding of the important role that forests, trees on farms and agroforestry systems can play in improving food security and nutrition, especially in developing countries. The conference will also propose policy options that need to be undertaken at national and international level to better position the role of forests and trees in food security and nutrition decision-making processes.

Given the diversity of the FSN Forum membership, we would like to invite you to share experiences and views, by responding to the following questions:

- What are the key challenges and bottlenecks hindering a greater contribution of forests, trees on farms and agroforestry systems to food security? These could be as diverse as policy, legal, institutional, practical skills, data etc.
- What are some concrete examples of innovative approaches, or good practices that increase the contributions of forests and trees to food security and nutrition goals?
- What is needed for food security policies and strategies to recognize the contributions and value that forests and trees bring?

The outcome of this online discussion will be used to enrich the deliberations at the conference and contribute to the final statement coming out of the conference.

A brief word about ourselves:

Eva Muller is the Director of the Forest Economics, Policy and Products Division of the Forestry Department at FAO

Fred Kafeero is a Forestry Officer of FAO with extensive field experience on participatory forestry and improving forest-based livelihoods.

We thank you in advance for your contributions.

Eva and Fred

Contributions received

1. Sibabrata Choudhury, Landesa (formerly Rural Development Institute), India [1st contribution]

Hello Eva and Fred and dear forum members,

Thanks for bringing in a very pertinent topic and perspective on food and nutrition security in highlighting the importance of forests and forest trees. I am saying so since most of the discussion on food and nutrition security are either centred on (a) farm food production (also linked global food availability and food prices) or (b) external supplementation of food grain, vitamins and micronutrients in order to address various facets of food security. Needless to mention here is the fact that we as global members have failed miserably in tackling the problem of food security in spite of increased levels of production of food grain.

Having worked closely in promoting rural livelihoods and land rights issues for the past several years I can have the liberty to presume that food and nutrition security at the household level is to a great level related to secure and safe access to land and other natural resource such as forest. In the state of Odisha, in India levels of landlessness are still high in many villages, which is especially more in case of indigenous communities (Scheduled Tribes). The case becomes more pertinent since the promulgation of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (known as the Forest Rights Act) in India. This legislation is considered to be landmark legislation for recognising the tribals and other forest dwellers' distinct residential and cultivation rights over forestlands. Government while admitting that 'historical injustice' was done to the tribals by not recognizing their traditional rights over forestland, brought about this effective forest rights framework that recognized, vested and settled forestland under occupation for self-cultivation for livelihood up to four hectares. In this four hectares or less, a non-forest land use in the form of a homestead and agricultural land use was recognized both to an individual or community without attracting the provisions of the Forest Conservation Act as it would have normally done.

As per latest reports available over 300000 tribals have their rights over forestland recognised. However as usual there have been issues related to incomplete coverage and reduced quantum of land being recognised. Estimates and interaction with the claimants reveal that a majority of claimants have received entitlement to only about 0.01 to 0.8 hectares. Though there have been some efforts towards integrating other development schemes such as the national wage employment scheme, orchard development under the National Horticulture Mission, results have been few and far between. It all boils down to effective implementation and focus on the programme.

Forest dependent communities often collect a variety of seasonal fruits, tubers and medicinal herbs to supplement their nutrition requirements. There is often a gap in systematic research or directed approach toward augmenting this effort. I can't come across any policy or programme that is directed towards this. Most of the forest development programmes deal with plantation and promoting livelihoods practices that would help the forest dependent communities "reduce" their dependency on forests.

I would suggest that there ought to be Nutrition Action Plans for each communities at each levels - community, regional, state and national levels to address food and nutrition security that would capture the nutrition gaps and provide an approach to address the gap that includes provisions from Government distribution programme and community initiatives to meet food requirements from forests and other natural habitats.

I look forward to participate in the discussion and learn from country experiences in addressing policy gaps and improving implementation of food security policy.

Thanks and best regards,

Sibabrata

2. Syed Md.Zainul Abedin Abedin, DAE, Bangladesh

Dear Eva and Fred,

I appreciate your great initiative to launch discussion on very pertinent issue for the present time. I will address the first point today. Hopefully, I will come back again to deal with the other two points as soon as possible.

Forest, trees on farms and agroforestry systems inevitably contribute towards food and nutrition security. But, it has been correctly pointed out that the many ways in which forests, trees on farms and agroforestry systems contribute to food security and nutrition are poorly understood, underestimated and not adequately considered in policy decisions related to food security and nutrition.

The key challenges and bottlenecks hindering a greater contribution of forests, trees on farms and agroforestry systems to food security are multifaceted. Adjustments in policy, legal and institutional aspects on the basis of existing practical skills and data may be helpful to streamline the production, procurement, processing and consumption of produces. For doing such adjustments, all relevant resources, policies, regulations and institutions need to be examined through detailed survey or review work. Then ideal policy, legal and institutional framework should be finalized for each community considering the gap in resources and potential of the systems. Programs for regulating the forest areas, trees on farms and agroforestry systems should be determined on the basis of the requirement of the communities, available land or resources and the extent of adaptation of the communities.

3. Champak Ishram, Community based organization, India [first contribution]

Hi Eva and Fred

You asked us to contribute our knowledge on this issue through this forum and you use the information in your paper and participate in the conference. Is it your moral ethic? People of international agencies use name of poor people and tribal communities of developing countries to justify their activities particularly in forestry field. But the people get the most benefit of the activities themselves and make the poor people and tribal communities even ruined or marginalized.

What are the key challenges and bottlenecks hindering a greater contribution of forests, trees on farms and agroforestry systems to food security?

Yes the forests are main sources of food security of tribal communities who historical sacrifice their wellbeing for the forest resource conservation. The tribal communities did not destroyed forests in their communities as much it did by western and other societies for farming. They used small forest area used only a small land area to cultivate crops, despite the production was insufficient to feed their families. They used non-timber products and sustained their living. That is the fact to have a higher proportion of biodiversity rich forest areas around the tribal community areas. But other societies did not recognized the contribution in environmental conservation and importance of forest for their food security. Most traditionally used forestlands were managed in common which are registered as public forests now The areas are now excessively controlled by state authorities. The territories of the indigenous people are encroached by government policies and activities of

other societies; and the communities are squeezed in marginal lands, and forced them to grow crop in sensitive lands and shorter rotation. The forest based people are blamed for encroaching on environmentally sensitive land and using forest resources but the fact of the resource uses are ignored. The forest management policies and activities of international agencies have never given attention of problems of tribal communities. They have advised governments of developing countries to meet the interest of and benefit western and non-tribal ethnic groups, and frozen the opportunities of forest land use practices of tribal communities. They have taken advantages of gullible natural behavior of our communities. Even in the concept note of this paper you have not considered the way of lives and forest policy issues of our communities. Therefore the main enemy or problem of tribal communities for forest based food security is international agencies and policies.

· What are some concrete examples of innovative approaches, or good practices that increase the contributions of forests and trees to food security and nutrition goals?

Innovative approach of forest based food security is management of forest for multipurpose uses.

· What is needed for food security policies and strategies to recognize the contributions and value that forests and trees bring?

It needed to stop policies and practices of international agencies that ruin tribal groups and poor people.

In summary the people including you who work in international organizations are the main hindrance for forest based food security of tribal communities and poor people.

Chapak Ishram

Manipur, India

4. Sibabrata Choudhury, Landesa (formerly Rural Development Institute), India [2nd contribution]

Hi again,

In a news release by FAO on Tuesday the significance of agroforestry to escape poverty, hunger and environmental degradation has been highlighted. It laments the lack of adequate policy measures and efforts by Governments to promote agroforestry that incorporates and integrated approach combining trees with crop or livestock production contributing towards food and nutrition security.

"Despite the numerous benefits of agroforestry, the sector is largely hampered by adverse policies, legal constraints and lack of coordination between sectors to which it contributes, such as agriculture, forestry, rural development, environment and trade." said Mr. Eduardo Mansur, Director of FAO's Forest Assessment, Management and Conservation Division.

Even though millions of rural poor depend on forests and agroforestry practices to grow food grain, fruits and other produce, there is a lack of policy and programmes that promote such practices. In India there is a National Horticulture Mission that promotes orchards and vegetable production. The Agriculture department also promotes different cereals, pulses and oilseeds through field demonstrations, subsidised seeds and fertiliser. But I am yet to come across a national programme on promoting agroforestry in a large scale. As far as my knowledge goes, the role of the Forest Department is restricted to the management of the forest resources (timber, other forest produce, wildlife) and generation of revenue for the Government.

Through the Forest Rights Act, 2006 the claims of (primarily) tribal communities over forest land is being recognised in the country. However there have been issues related to tardy implementation and huge backlogs. Moreover wherever communities have received their claims efforts to integrate with other programmes have been far between and without direction. I presume it becomes easier to implement single-track programmes as against programmes that require co-ordination and convergence between different stakeholders.

Sibabrata

5. Emmanuel Suka, Association of Friends of Limbe Botanic Garden, Cameroon [first contribution]

Dear Moderator,

Please, accept my greetings and contributions from Paris, France. Presently, I'm in Paris, France on a trimester, Mathematics of Bio-Economics at Institut Henri Poincare. Beginning with the first question, I summarise the following challenges;

- Land tenure conflicts and gender issues in Africa is a big challenge to forest, trees on farms and agroforestry systems to food security, since most women cultivate the land but do not have ownership rights, moreover, in Africa, most forest and forest land is an exclusively state property and belonging, therefore, most of the local populations do not have adequate farmland.
- Bad governance including bribery and corruption in the management of forest and agricultural sector.
- About 89% of Africa still practice local and traditional farming systems which are less productive and cost ineffective, therefore, modern agroforestry farming systems and farming technologies that is still in low scale needs intensive expansion and improvement.
- Experts in modern farming systems of Agroforestry is insufficient, thus, requiring massive training.
- Problems of invasive species and pests on forest, trees on farms and agroforestry is adversely affecting food security.

For question two, I suggest that the following methods can increase the contributions of forests and trees to food security and nutrition goals;

- + Agroforestry system and approach
- + Participatory forest management approach through community forests
- + Recognition of indigenous peoples rights according to the TRIPS Agreement, ABS (Access to Benefit Sharing)

For question three, my opinion on what is needed for food security policies and strategies to recognize the contribution and value that forests and trees bring is as follows;

- * Implement and re-enforce the law
- * Up-scale training and transfer technology
- * Develop and implement pilot projects for replication
- * Make constant monitoring and evaluation and collect data
- * Identify, promote and reward deserving and key players in the sector
- * Include value addition as a strategy

Thanks,

Emmanuel Suka

6. Roy Stacy, FAO & WFP

Bravo FAO for taking up this very important subject. It could not come at a better time, especially with the strong international interest in resilience. In my view, there will be little or no progress in resilience in rural areas of at-risk countries without an increase in trees density. There is a well known proverb in the Sahel, which when translated from the Wolof version, says that "the first best time to plant a tree is 20 years ago, the second best time is now."

A little known success story of trees and their inextricable link to food security can be found in the Sahel, in Niger. Following the great Sahelian drought and famine in 1973-74, local communities working in Niger with several different donors began in the early 80s to use community based forestry management as a basis for "drought proofing" their communities. This widespread effort was supported by France, Switzerland, Germany, the Netherlands and Swiss aid programs, and much of the best work was done through a private American company, the International Resources Group (IRG). I am especially happy that these efforts, were not evaluated prematurely, after 5 years, like so many projects, because there would have been sparse results. Instead after 30 years the results were dramatic.

Among the techniques used in Niger were the leaving of tree shoots in the arable fields, especially of valuable species, rather than scraping away all vegetation before planting grains. There was also considerable reforestation, especially of the nitrogen fixing acacia albida and also baobab because of their valuable and nutritious byproducts. This effort was comprehensively assessed by the CILSS and the Agrimet Center in Niamey in 2006, with the assistance of the USGS, and the findings astonished even the most fervent supporters of the approach. It was conservatively estimated that over 3 million hectares, mostly in the most densely populated regions, now benefiting. Tree density over the 30 years has increased 20 fold and crop yields are two to three times higher without the use of chemical fertilizers, which are too costly for millet farming. Most surprising has been a progressive rise in water tables through better rainfall capturing, and this has made off season bean and vegetable farming possible. It has also encouraged the farming of onions as a cash crop and Niger's production of onions has gone from 10,000 tons a year in 1980 to 270,000 tons in 2006.

The ability of individuals to own trees has been an important factor in this hidden success story in Niger. Legally, individuals could not own trees before 2004. They are now considered private property separate from the land they occupy, so trees can be bought and sold separate from the land. This has stimulated private reforestation efforts and given rise to sustainable wood lot production of fire wood and construction materials, generating off farm income for rural peoples so they can access food.

Yes, Niger is still plagued by food insecurity threats and malnutrition is of great concern, but the hazards would be so much worse today without the community based tree regeneration program that was undertaken since 1980 and is still going on. Rather, it has been Niger's very high population growth rate that have attenuated the gains made in farming, but that is another topic.

Roy A. Stacy
Senior Consultant to WFP and FAO for FSIN.

7. Paul von Hartmann, USA [first contribution]

In 2006, climate scientists first reported on the effects of volatile organic compounds called "monoterpenes" that are emitted by earth's northern evergreen boreal forests, also called the tiaga

(Russian for "forest"). The subarctic forest is dominated by conifers, mainly pine, spruce and fir, that begins where the tundra ends. The boreal forest is the world's largest terrestrial biome, encircling the planet's northern hemisphere. The taiga covers 6.4 million square miles (11 percent of the world's land surface area) from Siberia to Alaska, Canada, Northern Europe and Northern Asia.

The boreal "taiga" region

In addition to sequestering and storing atmospheric carbon, the forests exude a concoction of volatile aerosol compounds, including "monoterpenes," the fragrance we associate with pine trees.

Monoterpenes shield the earth from the sun in two ways. First, they rise from the forest into the stratosphere. The tiny droplets physically refract solar radiation away from the earth, effectively cooling the planet.

The monoterpene molecules also serve as condensation nuclei, "seeding" bright and persistent clouds, further shielding the earth from the sun. For thousands of years, atmospheric monoterpenes from the evergreen trees were a critical component of the fortunate alchemy between earth and sky.

At what cost, toilet paper?

The boreal forest is the world's most extensive network of pure lakes, rivers and wetlands that sequester and store twice as much carbon as tropical forests. Home to billions of migratory songbirds, tens of millions of ducks and geese, and millions of caribou, the boreal region is an irreplaceable global treasure. Regardless of its critical importance, the boreal biome is under increasing pressure. Recent studies show that boreal forests are being destroyed faster than any other terrestrial ecosystem.

Since 1950, more than half of the world's boreal forests have disappeared, due to logging, fires, mining, oil and gas development, insect predation, global temperature increase, reservoir flooding and storm damage. About two-thirds of the trees that have been cut down were made into paper products including books, newspapers, magazines, catalogs, telephone directories, cardboard, tissue and toilet paper. Seven percent (7%) of the world population living in the U.S. uses fifty percent (50%) of the tissue paper products -- about fifty pounds per person per year. More than one million trees wind up in American mailboxes every year as "junk mail."

Eighty percent (80%) of all forest products go directly to the United States. If Cannabis agriculture had not been prohibited in the U.S. for the past seventy-five years, all of the paper products could have been made better, cheaper and without harm to the environment from organically grown, biodegradable hemp. Hemp paper requires about one-seventh the chemicals needed to make paper from trees.

As it is today, warming temperatures in the northern latitudes have extended the breeding cycle of insects that infest the trees, eventually killing them. More trees are dying from insect pest infestation than ever before. Increasing UV-B radiation is broiling the trees, particularly at higher elevations, where the atmosphere is attenuated.

Changes in reflective properties of the earth's surface and the composition of aerosols in the atmosphere over the past fifty years have substantially shifted the heat exchange profile of the atmosphere and the icy, snowy "cryosphere" greatly heating up global temperatures. Present climate conditions, epidemic insect pest infestation, more violent weather, volcanic and seismic activity -- along with an increasing demand for paper products -- do not favor recovery of the boreal forests. Unless the premier crop for paper production is reintroduced, the earth will broil to extinction under increasing intensities of UV-B radiation.

Relatively stable, homeostatic concentrations of atmospheric monoterpenes have historically determined the levels of solar ultraviolet-B (UV-B) mid-length wavelengths of sunlight to which life on earth has adapted very, very gradually over an inconceivably intricate span of moments, seconds, days, months, years, decades, centuries, millennia, and eons. With the relatively sudden catastrophic death of the boreal forest in just the past sixty years, monoterpene concentrations and cryospheric cooling of the planet have plummeted in what amounts to less than the “blink of an eye” on an evolutionary time-scale.

One of the most disastrous mistakes our species has ever made is a direct consequence of Cannabis prohibition. Being denied the natural, competitive selection process afforded by a truly free agricultural market, mankind is consuming 5,543 square miles (3.5 million acres) of earth’s stratospheric shield against the sun. Gaia’s most evolved masterpieces of creation are callously murdered unnecessarily each day, for toilet paper.

Earth is being subjected to an accelerating increase in “UV-Broiling” levels, contributing to further temperature increase. Inconceivable as it may be, the trees of the boreal forest continue to be cut at a rate of about five acres per minute. Expanses of forest the size of Connecticut are being clearcut each day.

Unless the monoterpene levels of our atmosphere are returned to the homeostatic concentrations established over thousands of years, the earth will eventually “UV-Broil” to extinction. Agricultural production of monoterpenes that Cannabis uniquely affords has become critical to our survival.

8. Ewan Robinson, Institute of Development Studies, UK

This topic is especially relevant now, as donors and governments are scaling up their programmes to fight undernutrition through agriculture. If we ignore the contributions of trees and other uses of land to people’s livelihoods and diets, we risk negatively impacting nutrition in our rush to promote agriculture for nutrition.

How can we increase the contribution of trees and agroforestry to food and nutrition security?

A crucial first step is to ask: Whose nutrition (and livelihoods) do trees contribute to currently? Research on livelihoods shows that the contribution of trees can differ drastically between places and between social groups. There is clear evidence that in many places, it is the poorest and most marginalized social groups that rely on trees and forest resources the most (McSweeney 2004). This isn’t because of some inherent connection to nature, but because the poor don’t have access to more profitable alternatives.

We should think carefully before we proscribe a solution that involves formalizing tenure for land and trees or setting up community management institutions. Evidence shows that initiatives to formalize and ‘rationalize’ management of trees and forests often end up harming exactly the vulnerable groups who rely on these resources. Their access to trees is often reduced when interventions formalize the tenure system or increase the economic value of trees (Gray 2006). In my experience, I found evidence that the poor were excluded when I examined the long-term impacts of a highly successful community-based forest management system in western Senegal (Robinson 2011).

And trees may not always be the answer. At times, agroforestry can compete with other land uses that arguably contribute more to nutrition. Research in The Gambia (Schroeder 1999) documented that donor efforts to promote agroforestry (controlled by men) resulted in the displacement of irrigated vegetable production (which had been controlled by women).

None of the research mentioned here looked at how reducing vulnerable people's access to trees affected nutrition. But we can reasonably guess that in many of these cases, the outcome was not good. I am not familiar with the research on how gender affects allocation of income towards nutrition, but I imagine this is an important consideration. Those who know this area, I would be very interested to hear what the evidence shows.

By citing this research, I am not trying to say we shouldn't try to improve how trees and forestry contribute to nutrition. Let's tread carefully, mindful that past interventions have often not worked out for those people most vulnerable to undernutrition. Light touch interventions may be the best candidates. We should try to work with the grain, in the context of existing practices and informal institutions that allow the poor to access trees. Let's first be sure not to undermine the access they currently have to foods and income from trees, and then look for the best strategies for increasing their access to enough healthy food.

References

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9. Peter Steele Independent Consultant Agricultural Engineer, Italy

Eating Trees

Great subject - a perennial, of course, but there is always an opportunity of sharing information with those who may be new to the topic. Take Roy Stacy's story from the Sahel of the 1970s, for example, and consider the time-line involved with planting trees in your community - for that next generation, of course.

Just over five years the Sub-Regional FAO office for East Africa in Addis Ababa explored the mixed blessings of *Prosopis* spp. in the region. Many of you will know of the complexities of introducing and living with alien plants that quickly abscond their original planting areas, out-perform local management and eventually steal the land that was once open to everyone; and all this for the best of reasons - to provide feed, fodder, timber and livelihoods.

An Expert Consultation was held in Ethiopia in 2007 from which a manual/proceedings was prepared that captured the experience of local people - growers, processors, advisors, experts and others. Eradication efforts in Sudan, timber use in Kenya and charcoal manufacture in Ethiopia were discussed together with a host of other examples, noted and recorded alongside use of food from *Prosopis* spp. in countries from around the globe - Mexico, US, Argentina, Kenya and others. The proceedings contain a useful collection of recipes for those interested.

If you live in that belt of dry bush country that spans Africa from Senegal to Somalia you may already be familiar with this species - risks, advantages, opportunities and more. Should you be new

to the species or simply want to update yourself with information that may be new to you - get a copy of the proceedings. You should find it on-line in FAO publications.

Messages to take home, however, can be profound: In summary - don't introduce this plant into new lands.

File attached containing Paper #10 Sudan/Babiker & El Tayeb. Note section #8 'Enhanced utilization'.

Look forward to following the debate.

Peter Steele
Melbourne
10 February 2013

10. Bhubaneswor Dhakal, Nepal [first contribution]

Dear Moderators and members of the FSN

Forest contribution to food security and nutrition and problems depends on socioeconomic condition and culture. I am especially interested to contribute on the issue of food security associated international policy and support on common property forest. It is similar to Mr Champak arguments that how international agencies rob forest based people for their own benefit and elite class of their interest. Regarding using the idea of this forum in the conference some people take idea from others and sell to others as this is his or her creation. It is unethical practice but if they acknowledge the source, I believe it is unethical. There are hundreds cases of deceiving and robbing of poor forest based communities by international agencies by using symbolic and material powers and elites.

1. Evidences of robbing of forest based people by international agencies

Case One: I would share a REDD project case in the Khasi tribal community, a socially vulnerable ethnic group in Meghalaya India, in support of Mr Champak argument. It has been planned and practiced to replace local fodder based livestock (cattle) system by imported grain based livestock (poultry and pig) system in the communities (Project Idea Note, 2011). According to the REDD project agreement the community must comply that "Cattle if reared, should be of superior breed and stall-fed with cattle feed procured from outside" (Project Idea Note P. 16). The REDD is an international policy and is still under a pilot phase. The tribal community has eighty-five percent land areas under forest. Its private landholding size is average 0.25 ha per household which is insufficient to produce enough food for family consumption alone. The REDD project is advised and prepared by Community Forestry International (a California based INGO), funded by the USAID and certified by Plan Vivo Foundation (a Scottish-based INGO). The farming offsetting carbon emission produced by developed countries and affluent societies. If you read Vickers et al. (2012) document produced by FAO and RECOFT, the REDD project is considered innovation and indirectly advised for adoption of the model. From my knowledge of indigenous community and Nepal, the change of the forestry and farming systems will have a big long lasting social and environmental effect. It is very seriously bad advice and support. The intervention on the farming and forestry systems are done to offset carbon emission produced by developed countries and affluent societies. If the policy experiment with that degree of social risk had been done with vulnerable groups in developed countries, there would be considered it a serious issue (a social crime) and make a very big public outcry. However, the unethical practice (a social crime) has been internationally supported and highlighted as an innovation in developing countries by the international organizations. From my understanding the communal forest management for multipurpose uses would benefit environment and societies. In contrast the external agencies are to buy means of livelihoods of poor

communities for offsetting carbon emission produced by developed countries and affluent societies, and are challenging the vulnerable lives and livelihoods of indigenous people and other forest-based communities.

Project Idea Note. 2011. Project Idea Note for the Umiyam Sub-watershed REDD+ Project. East Khasi Hills District Meghalaya, India. Plan Vivo. <http://www.planvivo.org/wp-content/uploads/Khasi-Hills-Community-REDD-ProjectIdeanote-May13EM.pdf>

Vicker, B. Trines, E. and Pohnan, E. 2012. Community Guidelines for Assessing Forestry Volunteer Carbon Market. Food and Agriculture Organization of the United Nations Regional Office for Asia and The Pacific. Bangkok.

Case Two: Uses green forest products in the some Nepali community forests experimented for REDD policy, are restricted and criminalized for offsetting carbon emission produced by developed countries and affluent societies. These products and services of the forests are daily need basic goods of poor people barely sustaining their lives. You can see the problems in the forests experimented REDD policy by ICIMOD and funded by NORAD. Elites from national policy and community level are paid to criminalise the practices of forest products uses by the poor people. International agencies for example, ICIMOD consider the work as an innovation (please read the article by Karky et al (2012)). From my assessment international interventions on the mountain forest management has been destroying social-ecological systems evolved and sustained in hundreds years of mountain civilization. Based on my study Nepalese civil societies and forest based poor communities are abused. There are many problems which are not possible to share here.

BS; Karki, S; Rana, EB; Kotru, R. 2013. 'Innovative interventions in Nepal for implementing REDD+ at the community level. In Aneel, SS; Haroon, UT; Niazi, I (eds) . Redefining paradigms of sustainable development in south Asia, pp 215-236. Lahore: Sang-e-Meel Publications

If some people point the bad activities of the international agencies and voice in favour of poor people, they will be filtered from participating in different professional events or forums and excluded from jobs. Those people who brings ideas to deceive and rob people they will be rewarded. This is tradition of all people at management level of all international organizations including FAO.

Your questions:

What are the key challenges and bottlenecks hindering a greater contribution of forests, trees on farms and agroforestry systems to food security?

The factors hindering a greater contribution of forests to food security are deeply seated in institutions, more serious than gender discrimination problem. For example, the people in influential decision making position of national and international organizations consider that the forest should be used for timber production and environmental conservation and mostly to benefit for distance users -urban elites and affluent societies. It should be used only residual (often termed waste) products for food security for local people. It is also seen advice given by international agencies to Nepal. It is also clearly reflected in the discussion concept note distributed for this forum by the moderators. People working in forestry field are too much conservative and biased against poor people and indigenous communities.

· What are some concrete examples of innovative approaches, or good practices that increase the contributions of forests and trees to food security and nutrition goals?

It is indigenous systems of forest management for multipurpose uses which produce resources for food security and a good habitat for biodiversity conservation. It is well proven but international

agencies advised Nepal government that these are bad forestry practices. The agencies advised to follow industrial forestry practices (please refer Forestry Sector Master Plan 1988). Nowadays the international agencies funded and advised to restrict the forestry products uses and manage the forestry for strict conservation model to offset carbon emission of affluent societies. The forestry model

Thank you.
Best Wishes.

Bhubaneswor Dhakal

11. Cordelia Adamu, Business and Professional Women(BPW), Nigeria

1) What are the key challenges and bottlenecks hindering a greater contribution of forests, trees on farms and agroforestry systems to food security? These could be as diverse as policy, legal, institutional, practical skills, data etc.

Trees are life, this is a common saying .If trees are life then; we must begin to view them as such in Africa.

Policy; we've never been short of policies in forestry and agriculture. In short, good policy implementation in agro-forestry produced a lot of the trees my generation has come to enjoy especially the economic trees of the Benue belt in Nigeria. These trees provide enormous wealth for families who have managed them over the years. am not very sure of the average life span of these trees, but I strongly believe that in years to come if no deliberate action is taken by all stakeholders to bring back the next generation to the love of growing new trees ,we shall be seeing the last of most of these trees.

Legal ;if trees are life then legal policy on tree cutting and felling can be used to control the in discriminate felling going on especially in and around the Federal Capital Territory(FCT) of Nigeria. The government itself is the biggest criminal and actor in this activity. The FCT being a virgin land, when it was selected to become the new capital of Nigeria; One would have expected the government to develop deliberate policy to save and sustain these trees most of which provided and are still providing the indigenous people and other inhabitants food and income. The government has been responsible for massive clearing of layouts for construction regarded as development.

Institutional frame- work can be effective when it is driven by policy that has legal backing. As such each actor in the framework understands his or her duty and is legally bonded to adhere to rules and regulations. If the major actor overlooks an issue and turns around to force others to do what it is suppose to do, then some is wrong. This has been the bane of Nigeria (where it seems that nothing works except for people of like mind).This is where civil society could come to help, but unfortunately ,most of them own these organisations or partner with those who accept the norm, hence they are the ones striving currently in Nigeria. Any time there is an opportunity, I remember to ask this simple question; why do we have so many development agencies in Nigeria and yet nothing seems to be working. It is time for the International community to re-evaluate itself in Nigeria.

2)What are some concrete examples of innovative approaches, or good practices that increase the contributions of forests and trees to food security and nutrition goals?

A lot private individuals have taken up planting of economic trees although there is deliberate policy in place where the government is encouraging such. These individuals have observed the

massive contributions these trees make to urban food security .year in year, year out famers produce food in rural communities but find it difficult transporting these foods to urban cities.

3)What is needed for food security policies and strategies to recognize the contributions and value that forests and trees bring?

At individual level, people must accept to go beyond self and embrace tree planting. Through my interaction with people , in trying to encourage tree planting, I have had people tell me that, it will take too long for them to obtain the benefit of a tree they have planted because trees take too long to grow and produce fruits. When are fore parents planted the trees we are enjoying now, they were not selfish in their thinking, this is what the world has become. Selfishness has become a global mentality even with issues of food security.

Culture; we had myths and belief that prevented people from felling certain trees. Culture and tradition can help in changing people's perception about the importance of trees especially those contributing to food security. Of common interest is the Shea butter tree in the central belt zone of Nigeria, which is a very good firewood and charcoal producer but its economic value at a global level supersedes these local uses , this is also same for the locust bean tree and many others.

Policy driven by institutional framework taking into consideration every actor and stakeholder's actions and benefits can help to revive agro forestry and food security. When a segment of society is left of policy formation, a common practice with our governments, it becomes difficult for communities to act. The top to bottom approach must change especially when dealing with issues relating to nature, the people closest to nature are at the bottom not the top.

12. Karunagoda Karunagoda, Department of Agriculture, Sri Lanka

Three crops in forests, trees on farms and agro-forestry systems provide an important source of food for households in rural areas. Different types of vegetables, fruits, berries, yams, leafy vegetables, spices, bee honey, honey produced from plant saps and many other types of foods and beverages come from these sources. Characteristics of these food sources are widely varied among different agro-ecological regions and these differences could be utilized to improve food diversity and food security of households. The other advantages are low input nature of production and the produce is mostly organic by default.

The tree crops help to improve households' coping capacity to food insecurity that may arise due to seasonality crop production or crop failure. I have witnessed the capacity of these tree crops to supplement food during the period of food shortages. The households enjoy the blessing of tree crops that provided many types of foods and beverages (coffee, cocoa, pepper, mangoes, bananas, papaya, custard apples, sapodilla, guavas, rambutan, oranges, avocado, limes, pineapples, coconuts, jack fruits, bread fruit, yams, chilli, ginger, turmeric, leafy vegetables form tree crops). There are many types of medicinal plants that serves the villagers' needs free of any charge. The agro-forestry systems' capacity and potentials have been witnessed for generations and it could be promoted and protected to improve food security of households.

Food diversity of rural households shows a declining trend during the period of past few decades and tree crops can be effectively utilize to improve food diversity of rural households. The regions with more access to tree crops in their food systems show less incidents of malnutrition than regions with mono-crops. Some products from these systems are being channelled to urban niche markets. However, due to low levels of supply and long marketing channels, prices of available products remain high and products are not affordable to the urban poor.

If valued properly, in terms of nutrition, environmental services or monetary value, it would reveal the value of the system as well as the luxury of consumption of these food products. Therefore,

obtaining statistics related to production and consumption and valuation of total economic benefits of these resources would be a challenge.

Any agricultural development plan should recognize the important features and capacity of the tree crops to provide food for households vis a vis seasonal crops. In reality such measures are rare and therefore, prior evaluation is needed to identify the capacity tree crops in a given region to supplement food requirements of households. Once identified, the development plans should accommodate appropriate measures to conserve available systems and its supporting topography.

Land clearance for seasonal crops, construction of houses and removal of trees due to other socio-economic reasons are the main causes of system's degradation. This situation has serious implications on food security and valuable plant genetic resources. A concerted effort is imperative for conservation and development of these resources. It requires implementation of prudent land development planning as well as land use planning system. These requirements have been identified but implementation is a challenge.

Tree crops provide many benefits but absence of reliable data may results low level of policy attention. Investments and incentives for conservation, promotion of cultivation and investments on innovations (research and development, conservation methods, etc) are imperative for the proper utilization and development of these resources. Conservation effort would require establishment of field gene banks and provision of incentives for conservation within the existing agro-forestry systems. Another alternative for conservation is replanting of manmade-non-food-timber forests with multipurpose timber-cum-food trees.

These production systems show signs of degradation, in terms of area, productivity and diversity. There are many reasons associated with this trend. Lands have fragmented into small units due to due to population pressure. Land fragmentation causes a severe threat to presence of tree crops in gardens. People may not like to see big trees around houses. There are many concerns such as danger of falling fruits, falling of trees due to strong winds and possible damage caused by expanding roots to the foundation of buildings, etc. So we need innovations for small to medium tress or improved supply of services such as services of arborists, to make trees fit into small gardens.

Indigenous knowledge is associated with tapping and processing of some products from tree crops. A disruption to the transfer of this traditional knowledge can be observed and it is associated mainly with the changes in socio-economic environment. Lack of such knowledge would make these resources idle and it may give a wrong economic signal to the owners of resources to invest resources in alternative uses. Inclusion of traditional knowledge in local educational and agricultural extension systems and simple innovations to overcome difficulties of traditional processing systems would facilitate effective utilization of resources and their conservation efforts. The benefits of these systems could also be transferred to urban centers through appropriate promotion of marketing and cultivation of tree crops as a part of urban agriculture.

Kamal Karunagoda
Agricultural Economist
Sri Lanka

13. Chenchu Norbu Department of Agriculture, Bhutan

My views: The role of Forests, trees and agroforestry system in food and nutrition policy discussions is important for those small countries where mixed farming is practiced widely. This may be also true for a certain section of the population of developing countries. For example, the policy discussions are usually centered around contributions made by crops and livestock products on which the larger section of the population is dependent. This is because contributions made by

forests, trees and agroforestry are either not quantified adequately to draw the attention of decision makers or confined to the poor section of the society where we consider it statistical insignificant.

Good practices : During a growing season, one can find a lot of non-wood forest products (mushroom, bamboo shoots, herbs, medicinal plants, canes ..etc) available in the local markets. Oak logs are used to produce shitake mushroom. Fodders from forest and loppings (also used as fuel wood) from on farm trees are fed to cattle. These products are nutritious and free from pollutants, chemicals in particular.

We need to engage the foresters involve in the social forestry and non-wood forest products work in food and nutrition policy discussions. It may be more appropriate to have first regional consultations before going for global discussion regarding contributions of forests, trees and agroforestry system to food and nutrition security. Good way to start is at the local level..recognition by the local leaders the importance of forests, trees and agroforestry...!

Thanks, Good luck!

Chencho Norbu,

14. Jean-Laurent Bungener, France

Trees are the better way to preserve soil leaving organisms and manage microclimate that limit quick change in soil exposure to drought and sunlight or running water

But this take time. Depending on the local climate 15 years to 50 years are necessary to benefit of trees effect.

This is a long term investment. This investment must be done taking into account the direct needs of the people among two to three generation. At the moment forest or agroforestry could be conduct under different and opposite ways.

So I prefer first to ask What is the misuse of a forest or an agroforestry area? This is for me the key challenge, not misuse natural capital.

One concrete example was the presence of earthworm under old faidherbia tree on the top of a hill in burkina faso under minus 600mM annual rainfall. earthworms benefit of faidherbia impact on soil humidity and earthworm have theyre cast under the top soil layer. This is showing us that we have to understand the interaction between trees and soils animals. The quicker they came under tree protection the better it is for preserving soil fertility in some climate. The innovative approach is to enhanced this "symbiosis" wich depend also on roots biochemical byproduct, and to be able to maintain biological Corridor between young and elder trees. This is a whole world we have to learn to deal with.

Food securities policy have to include trees and soil leaving organism as a community that is growing until the tree is alive. This community is responsible of the supporting services of the ecosystem for a long term . It is the pillar of the ecosystem. Before cutting an old tree you have to guarantee that all the inhabitants of this community could find a place after the destruction of the tree. If not, no cutting. That was the role of sacred forest we have to maintain this traditional behaviour.

15. Marcus V.A. Finco, Federal University of Tocantins, Brazil

Dear colleagues,

Below my standpoint:

Firstly, forests provide several environmental services. So, traditional communities should be compensated and thus receive an economic incentive for that. The economic incentive not just decrease the communities' opportunity costs and therefore deforestation/degradation of native forests, but is also an important source of income that can be diverted to purchase food, for instance. Most part of family farmers in northern Brazil, especially within the Brazilian Legal Amazon Region, are food net buyers and thus alternative sources of income such as "bolsa-floresta" or "bolsa-verde" - which are based on environmental services payment - are really important for food security and nutrition of those families and at the same time a significant tool for forests preservation (win-win strategy).

Best regards

Marcus V.A. Finco, PhD

Professor at Federal University of Tocantins, Brazil

16. Salomeyesudas, India

Fruits seem to be a food that has been enjoyed by mankind from the earliest of times. Most of us appreciate fruits because they are the easiest foods to handle. Just wash and serve. Fruits need absolutely no preparation or cooking. In addition fruits lend themselves to be concerted into a variety of dishes. They can be baked steamed, stewed, crushed, made into salads, ice creams, juices and sherbets. They can also be made into delicious jams, jellies, pickles and puddings. Fruits can be preserved easily.

Fruits contain abundant quantities of sugar. In terms of nutrition, fruit are very good sources of several vitamins, minerals and dietary fiber. Fruits are important foods in terms of *health economy of ecology*. *Fruits are health promoting as well as pleasure giving. Fruits are very efficient sources of vitamin C and A. We all ways associate fruits only with those of high market value. But there are number of fruits available through out the year. These wild fruits are edible and nutritious. Most of these are location specific and seasonal. Some advantageous of these fruits.*

- *They are grown with out effort*
- *They are freely available*
- *They are consumed fresh therefore their nutrient contribution is significant.*
- *They are seasonal and plenty*
- *They are tasty*
- *They are free of pesticide residue*
- *They have high medicinal value*
- *They have high wood value*
- *Their foliage has high fodder value*
- *They are easy is to raise*
- *They are pest pesistant*
- *They have high survival rate*
- *They ensure our fruit consumption*
- *They add diversity to our diet*

In order to enrich our diet in terms of vitamins and minerals the most inexpensive way will be to promote wild fruit cultivation seriously. The most other important impact will be ensuring a healthy relation with our natural resources. And creating respect for nature in future generation.

Present situation:

- *The knowledge about these species is being erode slowly*
- *The present generation is not in a position to identify edible species*
- *Reduction in forest area has brought down the consumption of wild fruit to a very low level*
- *Cleaning of shrubs and shifting to Mono culture of fruit species is another area of serious concern.*
- *Need for identification of scientific names.*

A small research was done and analyzed for b - carotene content of some of the wild fruits is presented below.

Total carotenoids and b - carotene content of wild fruit samples

Sl.No	Name	Total carotenoids	b-carotene
		<math>\mu\text{g}/100\text{ g}>	
1	Ambadikayalu	570.69	16.85
2	Pulcheri	73.44	28.99
3	Nakkarapandulu	4236.78	428.59
4	Bonthapandu	161.25	12.29
5	Irkipandu	63.71	12.18
6	Medipandu	37.74	5.4
7	Illintha	514.73	16.56
8	Eethapandu	396.81	191.22
9	Chitmit	260.44	12.71
10	Kalmi	1026.30	326.66
11	Kakipandu	1300.39	177.16
12	Morripandu	1302.65	354.11
13	Kasipand	2057.98	147.38
14	Balusakupandluu	404.49	19.86
15	Pitlapandlu	766.82	22.44

Other uses of wild fruits

Sl. No.	Local Name	Type	Other values
1	Balusuku pandu	Bush	Leaf is good fodder, used as Fire wood. Rainy season fruit.
2	Illentha pandu	Small tree	High medicinal value. Winter season fruit
3	Chit Mit	Tree	Latex has medicinal value. Rainy season fruit
4	Chimidi pandlu	Tree	
5	Kaki pandlu	Bush	Fence, Used as fire wood, roofing material. Rainy season fruit.
6	Morri pandlu	Tree	High market value from fruit. Latex has medicinal value. Early summer fruit.
7	Parki pandlu	Bush	Fence, winter fruit
8	Pulichera pandlu	Bush	Fruits available through out the year
9	Kashe pandlu	Bush	Medicinal vlaue, through out year
10	Nalla jedi	Tree	Medicinal value, market value. Early summer fruit
11	Dudi pandlu	Bush	Early summer fruit
12	Thella pulcheri	Bush	Medicinal value
13	Medi pandlu	Tree	Latex has medicinal value, wood value. Summer fruit
14	Pam padiga pandlu	Bush Fence, winter fruit	
15	Sudi pandlu	Tree	Winter fruit, leaf has market value
16	Kalimi pandlu	Bush	Early summer fruit
17	Pitta pandlu	Bush	Rainy season fruit
18	Nakkiri pandlu	Bush	Rainy season fruit
19	Itha pandlu	Tree	Winter fruit, leaf has market value
20	Bontha pandlu	Tree	Winter season fruit. Firewood value
21	Sithaphal pandlu	Bush	Rainy season
22	Thada	Tree	Two crops

Because of thoughtless actions of man and low market value of these fruits we never gave them the place they deserve. In order to promote fruit cultivation we need to think in a new direction considering the following points:

- *Identification of edible fruit species*
- *Collection and documentation of these species*
- *Documentation of other values of these species. (Wood value, Medicinal value etc.,)*
- *Conservation of existing edible fruit species*
- *Propagation of these species scientifically*
- *Popularizing these fruits*
- *Conducting awareness campus.*

Quick and thoughtful program may ensure the conservation of wild fruits, which are important foods in terms of health economy and ecology.

17. Vishwambhar Prasad Sati, Mizoram University, India

The topic of the present discussion is so relevant in the spatial and temporal perspectives. Here, I would like to emphasis on the role of forest resource in sustaining livelihood in the Central Himalayan Region. This region is one of the biodiversity hotspots obtaining forests ranging from sub-tropical to temperate and alpine. Here, the economic viability of the forest resources is tremendously high therefore, the populace of the region has been engaging in collection of timber and not-timber forest products for the time immemorial. Forest covers above 65% land area. The economy of the region is based upon the cultivation of traditional cereal crops which production and per ha yield is considerably low thus, the people largely depends on the forest resource for

fodder, firewood, and food. Forests have the linkages with agriculture and crops production. For manure composition, most of the tree leaves are used to mix-up with cow-dung that enhance productively. In the Central Himalayan Region, oak and pine are largely used for firewood and construction of building. Oak leaves are also used as important fodder to the lactating animals. It enhances milk production thus, food security can be obtained. There are numerous forest products which are used as spices to food and medicinal plants and herbs for traditional health care system. The others are essential oils, fibers and silk, natural dyes and organic products, and bees and bee products. Wild fruits as kafal, hensole, kilmode, bhamore and many others substantially enhance livelihood options on which the local people are dependent. This illustration reveals that forests are the major source of livelihood thus, need attention for a comprehensive conservation measures. The traditional methods of harnessing non-timber forest products are sustainable that can be restored for the future use of forests.

18. Emmanuel Suka, Association of Friends of Limbe Botanic Garden, Cameroon [second contribution]

Dear Moderator and FSN Participants,

Some important facts were omitted on goods and services provided by forests relevant to food security and nutrition, interalia, provision of fresh water/protect watersheds, regenerates soil important for agriculture, recycle nutrients and wastes, provides resin, Non-Timber Forests Products including roots, leaves, vines, stems, barks etc important as local foods that augment local diets, important source of medicines for health safety and food supplements. Forests and secret forests serve as important areas for traditional and cultural grounds for performing cultural activities that contributes to traditional conservation and management of forest, traditional knowledge and innovation is one way to contribute to local access and protection of forests for food safety, security and nutrition.

My proposal is application of Integrated Ecosystems and Ecosystem Based Management Approach in the managing forests.

Despite the value of forests recognized world wide, there has been no specific Global Agreement/Convention on forest with obligations binding to all countries. I cease this opportunity to recommend that a world agreement dedicated on forest conservation and management be ratified to ensure food security and nutrition.

Thanks,

Emmanuel Suka

Cameroon

19. Champak Ishram, Community based organization, India [second contribution]

Hi Moderators and other members

I have some additional views, comments and suggestions.

a. International bodies of indigenous people strongly voiced in many climate change submits that it should be stopped criminalizing traditional forestry systems and using practices of indigenous people. It is because the means of hedging lives and wellbeing (livelihoods, social institutions and cultures) of indigenous communities are strongly attached to indigenous forestry systems and practices. I agree the REDD policy and support programme harm way of lives including

food security of the tribal/indigenous people in all countries including India. The money from the forest carbon sale cannot buy better substitutes of livelihoods, social institutions and cultures of the tribal people even in a decade or so.

b. There are institutional problems to manage forest for contributing on food security and nutrition. Even research organizations and universities are also biased against the forest based people. Once I assessed research worked by CIFOR and found that there were few researches in favour of tribal or indigenous groups. Most of research findings of the organization are against tribal/ indigenous ethnic groups and other forest based people. From my understanding the people from international organizations got opportunities to steal the livelihood means of forest based communities and other poor people due to extreme conservative forestry values and practices of national forestry professionals, elites or bureaucrats.

c. The saying “the Emperor's New Clothes” best explain the reality of international forestry development policy and support in developing countries. Evidences are self explaining that forestry organizations are stealing means of livelihood forest based people instead of helping.

d. There is a need of some dedicated people with intellectuality to work in favour of forestry based communities and socially disadvantaged people. International organizations are not heaven to work in favour of socially disadvantaged and forest based people. I have listened many problems and frustrations by my friends working in international organizations. They said that the people working at management level of international organizations have a undeclared social ring and limited opportunities of the organizations to the people of the elite circle. People working in the organizations should justify and defend all works done by the organizations or bosses even if these are horribly wrong. The best strategy to survive and get opportunities is pleasing powerful people in and outside the organizations. You need to spend most of your efforts to please people instead of working for producing quality outputs. People with open mind and fair attitude get hard time to work in such manner and survive there. Public rarely dare to challenge wrong doings of the people due to their high profile of their organization. According to my friends the people who point their work weakness get named in negative list. From my understanding the individuals pointing weakness of the people affiliated in the high profile organizations must have high levels of intellectuality to challenge them and dedication to work for forest based people. If you are dedicated to work for disadvantaged people you make much more differences working voluntarily from outside than working from the international organizations.

e. The intention of my writing is not challenging the job of symbolically high profile people working in national and international forestry organizations. I can never do it. But I am sharing the realities of forestry problem to contribute on food security and nutrition.

Thanks for reading my points.

Champak

Manipur

20. Eva Müller and Fred Kafeero, facilitators

Dear Forum members,

We want to thank you very much for taking time to contribute actively to this interesting topic, and more importantly we value the diversity of contributions, views and opinions all of you have expressed. Since the International conference is open to all categories of stakeholders, and yet not all of us will be able to physically participate and contribute our ideas, we want again to encourage

you to take advantage of the FSN Forum and have your voice heard. It is our duty to provide space for your views in the conference deliberations. Looking forward to more exchange on the topic.

Regards,

Fred and Eva

21. Giuseppe Amato COSV , Zimbabwe

The greatest problem in making these strategies working, I think, is related to the capacity of the people living in a certain place of planning long term. Sometimes is difficult to convince a farmers to plant even a fruit tree that after some months will begin to produce. Can you imagine how much they care about planting trees or getting involved in agroforestry?

22. Sara Savoie, FAO, Italy

Dear Colleagues,

In a climate change context, there is an increasing interest for services provided by trees on farms as they can improve sustainability, increase food production and soil carbon content, as well as contribute to the resilience of production systems as mentioned by both [Mr. Jean-Laurent Bungener](#) and [Mr. Roy Stacy](#) in this consultation.

I would like to bring your attention to an ongoing online learning event on agroforestry, food security and climate change, organized jointly by the Community for Climate Change Mitigation in Agriculture from the Natural Resources Management and Environment Department, as well as Forestry Department from the Food and Agriculture Organization of the United Nations, and key agroforestry partners CATIE, CIRAD and ICRAF. As the learning event addresses related themes to those discussed in this forum, I would like to invite you join the online discussions and last webinar session (to be held in March) of the learning event.

You can enroll through the form available online at the following address: <http://bit.ly/QM8NTK> . The programme of the learning event, as well as links to recordings of previous sessions can be found at the following address: www.fao.org/climatechange/micca/79527/. I would like to invite you especially to have a look at the recorded presentation, by this consultation's host Fred Kafeero, on the international conference on Forests for Food Security and Nutrition. It can be found at the following address: <http://bit.ly/VGJ5nc> , starting at recording time 1:06:59.

You are also most welcomed to join our LinkedIn group: <http://linkd.in/V45Riq>

We are looking forwards to having you join our discussions!

Best regards,

Sara Savoie
Volunteer, Forest Assessment, Management and Conservation Division
Forestry Department

23. Gunasingham Mikunthan Faculty of Agriculture, University of Jaffna, Sri Lanka

Agroforestry and trees allow for a diversification of agricultural production. This simple concept is reflected by incorporating trees with farming into tree-based farming. More we diversify the

system, less there are problems with pests. It is necessary to enhance the system from within to control the problems that exist rather than imposing external solutions. This is an important message for the establishment of home gardens for food security. The small scale farmers possess limited lands and their productivity is limited due to the cost of inorganic chemicals to control the pests. Hence the best solution to the aggravation of pests and minimize the use of inorganic toxic chemicals is moving towards tree based farming.

24 Shaikh Tanveer Hossain, Friends In Village Development, Bangladesh

Dear Forum Members,

Food security is greatly challenged by climate change, land degradation and natural disasters in Bangladesh. In recent years, the country has made steady progress in the expansion of food production. However, due to an increasing population, the gains made have been consumed by a parallel growing demand for food.

In the last two decades, frequent floods, droughts and cyclones have caused extensive economic damage and have impaired livelihoods in Bangladesh. Adapting to, and mitigating, the effects of climate change is a key to future sustainable development and food security issue in Bangladesh. 'Landcare' in Bangladesh is a new approach to sustainable agriculture and rural livelihood improvement which considers not only increased food production but also takes into account community participation and environmental issues while ensuring optimum use of resources. In our Landcare approach programs, we are advocating and promoting the different types of trees (fruits, forests etc.) into the rural households and community members considering its long-term economic benefits and food security.

Landcare allows an evolution in creativity and community achievement in natural resource management. It focuses on key issues including: land degradation; food security and productivity; biodiversity protection; and preservation of rural landscapes.

Recently we have initiated the Landcare approach in our programs with the technical support of Neo Synthesis Research Centre, Sri Lanka and Secretariat for International Land care Center (SILC). We are expecting that by the holistic approach provided by the Landcare approach which not only ensures environment friendly farming but also ensures increased production by optimum use of limited resources.

The adoption of Landcare in Bangladesh hopefully offer dynamic new approaches to: regenerative agriculture, eco-specific resource management; community participation; watershed management; landuse; plant/crop selection; land-water interaction and management; renewable energy; vulnerability and adaptation to climate change; peoples' participation in planning; implementation; and management issues.

Dr. Shaikh Tanveer Hossain
Sustainable Agriculture Advisor & Chief Agricultural Coordinator
Friends In Village Development Bangladesh (FIVDB)

25. Tcharbuahbokengo Nfinn, Cameroon

Cocoa cultivation has proven significantly to increase rural household income, reduce fuel wood energy consumption, conserve forests biodiversity and their watersheds, reduce land degradation, deforestation, open bush fires, and provide options to adaptation mitigation to climate change challenges. It continues to be the better side of the hidden agenda in curbing CO2 emissions from land degradation and deforestation, a concept which is farfetched in the United Nations agenda, instead concern is diverted into unjust initiatives in curbing CO2 emission from deforestation and forests degradation. Cocoa cultivation has for long shaped food insecurity challenges and improves food security dialogue among forests and Cocoa producing communities in Cameroon. However,

there are some challenges which affect its production, processing and marketing including poverty, lack of capacity and liberalization policy.

Poor Knowledge; Poor Knowledge on liberalization policy implemented by governments, Poor knowledge to bargain and search better markets, Poor knowledge of pest and pesticides application, Poor knowledge to engage in alternative income generating activities, lack of education on modern farming methods and research advancement, Poor knowledge of processing and marketing of Cocoa and Cocoa products, Poor knowledge on their rights to land and the environment.

Poverty: Lack of inertial capital has had huge impact on cocoa production and access to credits and loans to purchase agricultural inputs and influence quality, organic or fair-trade production, for example purchase of transportation equipments to reduce child labour and long working hours, build Warehouses to store dried Cocoa Beans and to construction of farm-to-market roads.

The impacts of these factors have been vast, including resistance to insect pests to particular chemicals. There has been a big push to rural - urban migration by the youths and working population to search for better opportunities around the world leaving the old and the young back home helpless. This has helped to promote;

- Child labour, prostitution and trafficking, poor hygienic and sanitation conditions, disease prevalence, Malaria and HIV/Aids, Hunger and malnutrition.
- Damages and wastes in Cocoa production is a common experience among the farmers, with an annual loss of over 30% of production.
- From insect pests like the Capsides Bugs causing ripening of immature Cocoa pods, damages from Parasites causing death of Cocoa trees e.g. mistletoe, damages from Coco Yam, Cassava cultivators who by the cause of tilling the ground cut the roots of Cocoa trees, damages caused by Black pod Cocoa disease when fungicides are applied at the wrong times and especially during heavy storms. Sometimes these pesticides are labeled to give a different image of a particular product where as they may be dangerous to crops and farmers.
- Damages caused by Overheat when trees are exposed to direct sunlight.

Cocoa agro forestry sector in Cameroon remains the best means of managing and protecting forests, land, water and all other issues of biodiversity as a means to promote sustainable development and combat rural poverty and hunger especially as 75 % of the country's population depends on its production. Solutions will be to:

- Provision of loans and pre-financing to farmers to assist promote cultivation and trade, Increase capacity building within these communities,
- Provide market and fair-trade opportunities for agricultural production,
- Build infrastructural development for farm to market roads, farm-to-farm roads and warehousing and drying facilities, Support for agricultural inputs like, spraying machines, fungicides, transportation vehicles (trucks)

The Green Economy is fundamental but except key players appear the development agenda, it becomes difficult to ascertain from the reality of Climate Change.

26. Violet Kadenyeka Mugalavai Chepkoilel University College, Kenya

Dear Forum members,

I would like to share my experience as a case study for your thoughts.

When I was growing up, my siblings and I enjoyed a good variety of fruits such as gooseberries and wildberries and other wild fruits from the forest woods. There were also loquats, guavas, and sweet bananas too. We climbed over the trees and reached onto the bushes and had unlimited access to fruits of all kinds. Little did we know that we were contributing to our own nutrition security which enabled us to get all the micronutrients, calories, and antioxidants, all necessary for good health, cognitive and physical development.. This also gave us reason to mingle with neighbouring children, make friends and develop our psychomotor skills. I look back and thank the times when forests were real and fruit trees were part of the culture of object-people relationships. We bonded with the bushes and the trees as we carefully picked fallen wood fuel sticks from the woods to take home to our mother to make the next meal. We looked forward to going back to the woods more often than not. All this is no more. I have recently embarked on rebuilding this experience for today's children to experience this wealthy and healthy cultural experience. It is important to rebuild diversity and conserve forests and practice agrofruitistry for the sake of both urban and rural children. Keep children healthy by providing for them creative ways of growing up and linking and gaining from the environment that they live in, educating them why it is important, for a sustainable ecosystems approach.

27. Paul von Hartmann, USA [second contribution]

Eva, Fred and friends,

What are the key challenges and bottlenecks hindering a greater contribution of forests, trees on farms and agroforestry systems to food security?

In 2006, it was reported that atmospheric aerosols ("monoterpenes") rising from the boreal forests protect the Earth from solar UV-B radiation in several ways. During our lifetimes, half of the boreal forests have disappeared, from logging and pest infestation. That means half the quantity of monoterpenes that used to be produced by the forests are gone. Present global temperature and increasing demands for paper made from trees do not favor recovery of the boreal forests. UV-B radiation has more than doubled in the past twenty years.

Increasing UV-B is a vastly under regarded danger, as it contributes to epidemic health problems, global warming, reduced harvests and increased solubility of mercury. Even the UN report released last month, entitled "Mercury : Time to Act 2013" did not mention increased solubility of mercury in relation to increasing UV-B.

Recognizing the impact of boreal deforestation on UV-B levels, and the effects on food security is of major relevance.

What are some concrete examples of innovative approaches, or good practices that increase the contributions of forests and trees to food security and nutrition goals?

Cannabis agriculture is unique in production of the same monoterpene aerosols as are produced by the boreal forests. Since it is an urgent priority to block UV-B radiation, it has become an urgent global priority to cultivate Cannabis to produce monoterpenes. Fortunately, Cannabis is also unique and essential in producing complete nutrition and sustainable biofuels from the same harvest. Cannabis is the only crop that increases food security and nutrition, while providing sustainable biofuels production and shielding the Earth from the Sun at the same time.

What is needed for food security policies and strategies to recognize the contributions and value that forests and trees bring?

First, it is important to recognize how vital the boreal forest regions are to protecting the Earth from UV-B radiation that is increasing. This means our species has to find a better source of paper products and building materials than trees. Cannabis provides feedstock for making excellent paper products, with far less chemical input, compared with paper made from trees.

Secondly, the suppressive, intimidating influence of Cannabis prohibition has precluded Cannabis agriculture from objective consideration and crippled the free organic agricultural market. What's needed is for people to suspend the irrational prejudice imposed on society against the world's most useful agricultural resource in order to resolve climate imbalances that threaten us all with imminent systemic collapse.

28. Maria Eugenia Rinaudo Mannucci, Our Opportunity in Climate Change, Venezuela

Dear members of FAO FSN Forum,

Current societies faces many global challenges that affect (and in some cases is already affecting directly), the lifestyles of citizens and communities. Climate change, for example, represents a potential threat to all sectors of a country, including the economy, polity and culture.

According to official data from the UN (2012) by 2050, world population reached 9,000 million, which further compromises the food and water security globally. If still maintaining the same agricultural practices, increasing urbanization and current diets, the amount of water needed for agriculture (in terms of potential evapotranspiration) that is currently of 7130 km³ of water, increased from 70% to 90% between now and 2050 (UNEP, 2011).

Moreover, the negative effects of climate change, commit to accentuate the periods of droughts and floods, which only in Africa, could reduce agricultural production by 15% and 30%.

According to official data from FAO (2012), currently more than 870 million people worldwide suffer from hunger, a directly affected their quality of life and development of their communities, these being more vulnerable to adverse effects of climate and poverty, which latter is a fundamental aspect that directly affects social welfare.

In this case, forests contribute in a direct way, to improve the quality of life of the people and at the same time, the preservation of ecosystems and natural resources. Ecologically speaking, forests are ecosystems of great environmental importance, since they contribute to the area's ecological holism, protecting thousands of animal and plant species and strengthening relations between them.

At present, the increase in temperature in the climate system is clear and unambiguous, according to which so much evidence pose. According to the IPCC (2007), the current global climate change is being caused by anthropogenic activities, framing man's daily habits that degrade the environment and have become increasingly vulnerable.

High levels of deforestation, intensive agriculture and livestock, dependence on fossil fuels and exorbitant development model based on policies that disrupt economies and the environment, are just some specific causes of current climate change.

According to Andrew Mitchel (Founder of the Global Canopy Programme), "forests offer a onetime opportunity to mitigate and adapt us to climate change. Approximately 20% of the emissions

reductions needed by 2020 to prevent global temperatures rising above 2°C can be achieved by reducing deforestation and forests degradation”.

Emissions from deforestation account for around 17% of global GHG emissions, more than the entire transport sector (IPCC, 2007). An agreement is currently being negotiated under the UN Framework Convention on Climate Change (UNFCCC), to include reducing emissions from deforestation and forest degradation (REDD+) in a future climate change regime.

The impacts of climate change are felt the most strongly in developing countries and it's the poorest countries that are least equipped to adapt to the effects of climate change. Financing REDD+ will be an essential part of the Bali Action Plan, since forests account for nearly 40% of developing country mitigation potential and can play a crucial role in developing countries ability to adapt to climate change.

According to the World Bank (2004), forests therefore are an essential component of developing countries efforts to combat climate change. Tropical rainforests also directly support the livelihoods of 90% of the 1.4 billion people living in extreme poverty. The loss of forests therefore jeopardises the livelihoods of the poor and the ability of the world's poorest to adapt to climate change.

The negative effects of the challenge of this century, are visible worldwide. No nation is one hundred percent prepared to tackle climate change, with those most vulnerable developing countries or with very high poverty rates.

According to the report "An ecosystem approach to water and food security" published by UNEP and the International Water Management Institute (IWMI) in 2011, the main objective is to ensure the sustainability of natural resources to meet the future food and water challenges. The document states that 1,600 million people currently live in areas already affected by water shortages and if nothing changes, that number could soon reach 2,000 million.

To reverse this situation, the report proposes the establishment of agro-ecosystems, seeking a balance between ecology and agriculture that increase agricultural productivity, conserve water and ecosystem protection.

Similarly, the creation and consolidation of international, national and local holistic policies which promote the conservation of natural resources, which enable sustainable agricultural production and water conservation. This could allow better adaptation to the communities most vulnerable to climate change and at the same time, could improve the living conditions of these people.

Sustainable development, it becomes a "shield" against the negative effects of climate change, becoming less fragile communities and populations most in need. Recent studies by UNICEF, have shown that the most affected to suffer the consequences of global climate change are children and women, which is essential for the empowerment of education and decent employment to be able to better adapt to changes to come. Joining equity ties, strengthening endogenous development is to mitigate the consequences of the serious problems in the world, including extreme poverty, food insecurity and climate change.

Thank you so much.

Best regards.

29. Stephen O. Adejoro, Zartech Ltd, Nigeria

Forest resources are a form of natural capital assets owned by communities and nations. Beside protecting our soil against the devastation and vagaries of climate change they form part of the solution to the re management of the prevention of soil erosion and desert encroachment for the vast advancement of desert to the south of the sahara in africa. Forest and tree planting have eternity opportunity cost equivalent to the cost of mitigation of the. effect of climate change on soil integrity in climate change disasters. Forest is a natural bank for our natural food profile and medicinal resources that we must keep and value its inventory for posterity. Every nation and government at every level must invest in keeping inventory of forest and trees of biological and nutritional value to the community. Moringa oleifera as a tree is wealth food and health provider to the poor communities of the world as well as a viable source of livelihood. This tree can also replenish soil nutrient thereby is very appropriate as a soil replenished fertiliser. There is a need to work more on these categories of trees as global tree resources needed for mitigating the effect of climate change on our soil as well as providing food medicine and nature fertilizer for our forest sustainability and animal industry growth. Thank you for giving me the opportunity to add this contribution.

Thanks and god bless you all.

Dr Stephen Adejoro

30. Waheed Jamali, SEARCH Pakistan, Pakistan

We must say forests, tress and rangelands in our area “Kachho” in Sindh province of Pakistan are the only source of our livelihood. Grazing lands provides fodder to our livestock and livestock provides milk, butter, meat, other milk products and hard cash by selling our livestock and its products. Many fruit trees are also found in our area and provide nutrition. Honey is also found in our forests, some of the fruits of trees and bushes are used as vegetable.

Without tress, forests and rangelands we are nothing! That’s the reason we, SEARCH [Society for Environmental Actions, Re-Construction and Humanitarian response] are actively working and mobilizing communities for social forestry, conservation and protection of environment.

But, feudalism and land grabbers are the major threat and Government departments are not much active to stop them! Hence; we are helping communities and motivating them to conserve their resources with the support of local departments and by managing communities.

31. Matthew Fielding, Stockholm Environment Institute, Sweden

As an entry point into policy development we agree with the statement that forests and trees provide benefits for food and nutrition security and we would like to accentuate this with a few statements.

Challenges & Bottlenecks

For practical reasons the environment and its services have been defined with different definitions depending on the sector that produces the definition. For example agriculture has been defined simply as cultivation for food (fibre, fodder & fuel) or forests as being land with canopy cover of more than 10 percent. As a consequence the corresponding policies developed through the use of these definitions have become limited by their own specificity. For example, food production has been connected to agriculture (e.g. the government agriculture department) and trees and timber to forest (e.g. forestry department).

Perhaps it is the plethora of benefits, or their sheer diversity that has meant that trees themselves have fallen into categories, in order to be better managed. Fruit and nut trees like cocoa and cashew, were not in the same context as plantation species like pine and fir. However in the context of food security the multiple benefits of trees must be realised.

Concepts such as environment, livelihoods, socio-ecological systems, watersheds or landscapes are absent reflecting that there is a need to move towards a trees & food approach beyond these sectors.

Multiple Benefits

There is a need to characterise both the direct and indirect benefits of trees.

In the context of food security the direct benefits of a tree is the provision of food, commercial products (rubber, palm oil) and carbon storage (in the form of increased biomass or through different climate mitigation initiatives). The indirect benefits are multiple; trees can be a driver of landscape change by creating diverse micro-climates beneath their foliage, blocking direct sunlight, increasing humidity, soil moisture and providing a source of organic matter. Whilst there is little research showing direct causality between trees and food, these effects have been shown to stabilise food production. That has been shown to raise household income leading to greater resilience within rural areas.

In the Maradi/Zinder Sahel region of Niger, a method called Farmer Managed Natural Regeneration (FMNR) uses the *Faidherbia albida* tree for multiple benefits. It defoliates during the wet season leaving crops underneath both access the water without competition from the tree and in the dry season is a source of both fertilizer and fodder for the farmers. Over a wider scale these matrices of trees are contributing to a re-greening of the Sahel, restoring the soil and creating landscapes where agriculture can again be practiced on a large scale, thus contributing to food security. We must look beyond the direct benefits of trees and see how trees can interact within the agricultural system for the enhancement of food security.

Policy needs

The discussion regarding food and forest is very often overloaded with anecdotes, describing cultural rights and flavoured with poverty romanticism. From a policy perspective these 'stories' have to be seen as dynamic and useful. The questions which need to be raised are; i) how can these well- adapted, accepted and often durable land use systems combining food and forest be extrapolated and ii) how can these systems stay dynamic?

Recommendations

- There is a need to move towards concepts such as environment, livelihoods, socio-ecological systems, and cross-sectoral approaches to enable landscape management for the benefits of food and nutrition security.
- We must look beyond the direct benefits of trees and see how trees can interact within the agricultural system for the enhancement of food security.

Contributing organisations

SIANI is the Swedish International Agriculture Network Initiative

Focali is the Forest, Climate and Livelihood research Network

Contact persons: Matthew Fielding (SIANI) & Madelene Ostwald (Focali)

32. John Ngatia, FAO, Kenya

A critical issue particularly for the arid, semi arid and savannahs of sub Sahara Africa. Trees and woodlands provide fruits, livestock feeds and also incomes (charcoal, honey etc) and land/soil protection from degrading forces. Indeed trees on our land are far more important than economists make us believe.

To address regional diversity, it may be important to ensure that regional specific conditions and seasonality's are thoroughly understood including traditional coping mechanisms associated with trees. It would make sense to probably allow room for adaptable policy frameworks for diverse application. Trees and tree products come in handy when nothing else is capable of supporting livelihoods in the semi dry land woodlands. In Kenya for example, the Baobab tree provides not only food supplements during drought but also enhances the nutritional value of the starch (maize) which is usually the most easily available food. Incorporating small livestock like rabbits and poultry in Agro forestry systems can greatly enhance nutritional value of the food as it addresses food security issues.

Harnessing tree crops for production such gums, frankincense, resins etc can further increase local incomes and so improve food security. This coupled with potential for carbon sequestration can provide additional income and incentives to ensure more are planted and more are conserved.

33. Abubakar Sadiq Ibrahim Birma, IFAD / Federal Ministry of Agriculture and Rural Development, Nigeria

Forest and Trees provide tangible and intangible benefits for food and security to man from the existence of man to date; the relationship that occurred between Adam /Hauwa and trees notwithstanding.

The contribution of trees in construction , watershed management , climate change, erosion control Desertification control, fruits, soil fertility enhancements , medicines, environmental amelioration and atmospheric purification are all benefits that lead to increased income, health, employment opportunities , increased food production, nutrition, food security, and increased standard of living to the human race.

Government should legislate and enforce laws on bush burning, and deforestation and encourage and make deliberate policy on tree planting in form of woodlots, trees on farmland, windbreaks and shelterbelts by both males and females.

This will help promote the services of trees for the better, in terms of food and security.

Thank you.

34. Bhubaneswor Dhakal, Nepal [second contribution]

Dear moderators and other members,

In my last posting I sent a wrong note which had some typo mistakes, inconsistent sentences and incomplete lines. I would like to correct and complete them. Firstly I would like to clarify that using ideas of this forum in conference papers by acknowledging sources is not unethical practice. I am also not challenging the jobs of people in high profile organizations. I am sharing my experiences and understanding that current forest policies and practices at both national and

international levels are focused on benefiting affluent societies and elite classes which have harmed local food security and economic activities and marginalized forest based communities and other socially disadvantaged people in developing countries. I pointed international policies and agencies because they have very high influences on determining national policies of forest management and food security in developing countries particularly with weak institutions and bad governance.

1. How do forests contribute to food security in developing countries?

Many participants focused on direct contribution of forest on food security and nutrition. Forests also contribute to food security indirectly. Traditionally, many varieties of local vegetables, herbs, spices and other food crops and animal breeds were evolved and sustained on the forest resources based compost such as in Nepal. Some varieties are chemical fertilizer intolerant. The varieties and animal breeds are adaptable to marginal lands and still important means of food security for socially disadvantaged people. Access to products and services of common or public forests are also required for sustaining transhumance livestock practices and utilization of alpine pasture. The resources are important means of food security of people in remote areas and mountain region. Community forests under the international interventions are managed to increase wood supplies to urban users and offset carbon emission produced by developed countries and affluent societies which institutionally locked opportunities of multipurpose uses of forest. Decreasing multipurpose management of forest has reduced local people's visits to forest and diversified product availabilities. It has greatly contributed to eroding local knowledge and practices. The water sources of many communities are springs. People have experienced decreasing of dry season spring water flow in Nepal as forest cover increases in the catchments. International interventions on forest policies in developing countries have hampered the indirect contribution to food security.

2. What is needed for food security policies and strategies to recognize the contributions and value that forests and trees bring?

As I stated in my last posting that the problems are very pervasive and complex to exploit the opportunities that forest and trees contribute to food security and nutrition. International funding practices, working behavior of working in forestry field (national and international levels), changes in national and international forest policies and forestry educational systems are increasingly going against forest management for food security and forest based people. Private land areas of many households are not enough to produce forest or trees for food security. Community forest and public forest resources are means to complement private resources and contribute to food security in the forest based communities. This has received very little recognition from influential agencies or people. Even the facilitators have not recognized these problems in the concept note distributed in this forum for discussion.

3. A question for the facilitators

I would like to ask the facilitators what motivated FAO to work on forest management for food security. FAO policies and working histories are very controversial on this subject. For example, FAO was one of the leading agencies to advise and support Nepal government for reducing forest resource based livestock holding (a principle means of food security) of Nepalese farmers (please read preface of Nepal's Forestry Sector Master Plan 1988). FAO has also policies to support REDD programme in developing countries. If you work to promote forest management for food security, the policy will conflict with international forest policy of other influential donors such as UK, Norway, US, Germany and Australia which reaffirmed their commitment of

continuous funding and supports to achieve REDD objectives in developing countries beyond 2012. The forest managed for REDD cannot contribute on food security. The donor agencies are interested to reduce livestock holding of developing countries as I showed evidences in India and Nepal. I request facilitators how the FAO address the conflicts if you like to change. Are you raising the agenda just for formality and show an accomplishment of an activity in your progress report?

4. The problem of international forestry management policy: A kaleidoscopic case

The problem of international forestry management policy is a kaleidoscopic case that can be explained by multiple schools of thought. Some schools of thought are as follow.

a) Proponents of the western hegemony school of thought argue that international policies and practices are founded on the western world's institutions, values, social preferences and practices which are routed through the place of organizational origin (in the case of INGOs), main source of funding, languages, people's expertise and pro-western preference in influential job positions. Most of western values and practices are incompatible with conditions and needs of forest based communities in developing countries and in many cases environmentally unsustainable or unfriendly. The practices and values of western world are propagated and imposed through international forums and agencies. The values, ideas and practices of the non- western world are filtered or suppressed. The pervasiveness of the western hegemony has made national professionals powerless to understand and protect the quality of local institutions and practices and real needs of disadvantaged citizen. Therefore forestry resources traditionally used in achieving food security is hampered by increasing western influences on forest management in developing countries.

b) Scholars of the institutional school of thought argue that the community unfriendly activities and marginalization are outcomes of bad governance of government agencies of host countries. The government of institutionally weak and bad governance gets easily influenced by vested interest international agencies or governments, and imposes forest policies and practices for the benefit and interest of the international agencies or governments. The policies and practices hamper forestry contribution on food security and marginalize poor people.

c) The proponents of the behavioral school of thought argue that people working in forest and environmental field have been too conservative and narrowly focused by education, professionalization and working practices. They have lost their thinking ability and judgmental capacity in socioeconomic needs and broader environmental problems. The wrong doings of the conservative people have been unchallenged by other professional groups, civil societies and intellectuals due to technically complex field. Forest based and poor people have been victim of the wild behavior of the people working in forestry and environmental field.

d) Proponents of the neocolonial school of thought argue that developed countries, purposely and strategically introduced forestry institutions and management practices to lock the land resources used in food production and destroy livestock farming in developing countries. The restriction on land uses of developing countries increases future market value of agricultural products for developed countries which hold vastly privatized lands and well developed technologies. This can help to influence world policy by controlling food. The controls on the use of forests and the production of livestock in the poor communities also reduce global greenhouse gas emission, which would relieve the pressure on emission intensive businesses in developed countries.

e) The argument of proponents of the gangster school of thought differs from the proponents of the neocolonial school of thought. According to the gang school of thought, an influential ‘gang’ of business people (often termed think tanks, experts and consultants) have socially tactically constructed forest policies and values in the world and sold to influential political actors including governments in developed countries who are desperate of tactical ideas and policy solutions to cool down public outcry for environmental management in home, and keep their symbolic and political existence in overseas. The gang developed the idea to maximize their benefit and did not care who loss and impact in societies. Similar behavioral business groups also are existed at regional and national levels. They have propagated the practices and ideas of the master mind gang and are paid by developed countries. Other people hopped on their bandwagon. The forest are managed poor communities became victim of the working policy of the business groups.

5. Summary international forestry development support is a “Naked Emperor’s” story

Forests used by communities in developing countries are considered inefficiently managed and environmentally degraded, and that international policies, payment and development supports would improve the products and services from the forests, benefit local people and contribute on holistic environmental sustainability. International measures are increased to manage the forests and achieved the objectives. This study used secondary sources of information and the coupled social-ecological system theory, and critically analyzed local issues of international policies and supports on community forest and climate change forest management in Nepal. It showed that the forest management interventions institutionally locked opportunities of multipurpose uses of forest, worsened water yield and local knowledge, and hampered local economic activities. The interventions influenced the host country’s policies and forestry practices which spoiled indigenous forestry systems evolved and practiced over hundreds of years and reduced local food security. The management also reduced habitat diversities for forest based species and resource supplies for sustaining agro-biodiversities. Local people are used to manage forests in the name of community participation but they are oppressed and institutionally and economically marginalized. Some of the forestry systems established by the external interventions are turned too costly to change and will remain affecting local communities and environmental systems and benefiting distance users for long term. It can be best termed a green grabbing of local forestry resources.

Thank you.
Best Wishes.
Bhubaneswor Dhakal

35. Gill Shepherd, IUCN, United Kingdom

1. Introduction¹

For millennia, forests, trees, and woodland were the source of land for settlement and cultivation, materials for construction, woody biomass for fuel and energy, and for food and nutrition as well. The continuing contributions of forests to global biodiversity, the fertility of agricultural lands, and the food security of rural people still mean that forests are immensely valuable for sustainability.

¹ The introductory section of this note is drawn from the paper, ‘Economic Contributions of Forest’ prepared for the United Nations Forum on Forests by Agrawal et al 2013. The main text is based on work by the author and on a literature review prepared for the same paper.

Even if only the formally recognized, officially reported monetary contributions of forests to the economies of the developing world are taken into account, they exceed US\$ 250 billion more than double the flow of total development assistance. Data gaps and absence of reliable information are major problem in estimating the economic contributions of forests beyond what is available in official reports. Country- and region-specific efforts indicate that where such data are reliably available, the non-cash economic contributions of forests to household and national economies range between 3 and 5 times the formally recognized, cash contributions.

In addition to their direct, cash and non-cash economic contributions, forests also provide substantial levels of employment which are also important for food security. More than 13 million people are employed in forest sector activities in the formal sector. In the informal sector of small and medium forest enterprises, another 40-60 million people may be employed. Estimates of the number of people deriving direct and indirect benefits from forests – in the form of food, forest products, employment and direct or indirect contributions to livelihoods and incomes – range between 1 billion - 1.5 billion.

Unlike most other sectors, forests also contribute massively to the ecosystem services that humans value, even if they are not traded or even if it is difficult to put an economic or a food security figure on the value. Different valuation strategies peg the economic value of ecosystem services from forests in the neighborhood of additional hundreds of billions of dollars.

The absence of data on economic contributions related to non-timber forest products (NTFPs/NWFPS²) and their value, and the lack of information systems that can incorporate such data systematically are major bottlenecks in a better understanding of forest sector contributions. They also represent a major deficiency when it comes to improved management so as to enhance the total economic contributions of forests. Indeed, the effective absence of information on the value of such benefits from forests has meant an overemphasis in forest governance systems on managing forests for products that are highly visible, formally recognized, and with cash market value.

2. Forest Economy at Household and Community Level

Cash and non-cash uses are often so intertwined at the household and community levels that their contributions cannot be easily separated. The cash value of non-timber forest products is highly variable - varying by the tradable value and rarity of the product, by its location as regards markets and by whether local circumstances make value-adding by processing worthwhile. For many years, while people suspected that NTFPs/NWFPS were more valuable than appeared from national level forestry department records, firm evidence was difficult to come by.

Three major studies by CIFOR (2004, 2005) collated a series of case studies for Africa, Asia, and Latin-America and investigated the cash value of a range of products in each. These studies contributed to debates about how far NTFPs/NWFPS support household incomes. Evidence gathered showed just how diverse different products were in their potential, and how their production varied according to whether they were truly wild resources, were resources from forests under some sort of management such as community forests or forest fallows, or were more fully domesticated. Externalities play a large part in the profitability of NTFPs/NWFPS. Those which can be traded beyond the immediate area (known as 'tradables') are very vulnerable to changes in accessibility and transportation; technological innovation which may create competitor

² The term NTFP/NWFPS, *non-timber* forest products, is the most commonly-used term for everything (including fuelwood and light poles used in house construction as well as foods and fibre) drawn from the forest for home use or sale. NWFPS (non-wood forest products) is the term that FAO prefers, so that all wood products, from timber to fuelwood can be grouped together. Most writers prefer the former term because it divides forest products by two very distinct groupings of forest user: loggers and local people.

products, or fashion Processing does not always add value, and that the costs of doing so might outweigh benefits for local people. Locally traded products ('non-tradables') are more immune to these forces but may be overtaken by new foods, and new domestic items which become available in rural markets and substitute for what was once drawn from forest products (Belcher and Kusters, 2004).

The CIFOR studies did not look at all at non-cash value, and their unit of analysis was the product, not the household. A relatively larger number of other NTFP/NWFP studies do consider the household as the unit of analysis, some making it explicit when both cash and non-cash values are being counted as 'household income' but many unfortunately failing to do so.

3. Cash and Non-Cash Income from Forests at the Household Level

It is difficult generalise about NTFP/NWFP sales and consumption: the data is very varied by site and region. Cash income from forests comes from the sale of the wider range of NTFPs/NWFPs collected by local people for that end. Non-cash income from forests is defined as the forest products which households collect but consume/use in the home rather than selling. These may be fuelwood, timber, forest foods and medicines, fodder or fibre. The two together go to make up the economy of the household, along with other cash from employment, trade or forest enterprise activity, agricultural sales and agricultural consumption.

In the case of the IUCN programme 'Livelihoods and Landscapes' which ran from 2007-2011, (Shepherd, 2012) three patterns emerged for levels of forest reliance (i.e. an aggregate of cash and non-cash reliance): (i) Modest or special purpose forest reliance (average contributions of forest to livelihoods of around 18%; (ii) Forests form a major part of livelihoods (average contributions of forest to livelihoods are up to 35%. and (iii) Forests are as important as or more important than agriculture (average contributions of forest to livelihoods are 50% or more - e.g. Congo Basin, Indonesian Papua).

Six key findings emerge from the IUCN case studies.

- o Forest use is higher where there are few opportunities for off-farm employment, and where investments open to wealthier villagers, such investment in livestock or the planting of high value trees, are unavailable to poorer farmers.
- o Similarly, forest use is higher in the absence of easily reachable markets.
- o There is always a relationship between agricultural production and the use of forest: higher agricultural production tends to mean somewhat lower forest use.
- o Non-cash uses of forests continue even where there are no cash sales of forest products at all.
- o Non-cash values make a larger contribution to overall household income than do cash values in almost every case, ranging from being twice as important to being four or five times more important.
- o Men sell about a third of what they collect, and the remaining two-thirds of their collection labor goes to the household. Women sell about 20-25% of what they collect and the remaining 75-80% is committed to household needs.

The overall picture of cash and non-cash reliance can be nuanced by examining the types of forest products being extracted. The table below (Source: Shepherd, Kazoora and Muller 2012) shows patterns of product use from eight villages in Uganda, aggregated to provide a more substantial picture than is possible from a single village.

Cash and non-cash incomes for 8 Uganda villages

Forest Products grouped by category	CASH		NON-CASH		TOT AL	The greater importance of products for direct (non-cash) use than for
	No.	Per cent	No.	Per cent		

						cash
Fuel	324	10.1	951	29.5	39.6	3 times as important
Building materials	276	8.6	526	16.3	24.9	Twice as important
Forest foods	192	6.0	409	12.7	18.7	Twice as important
Fiber (for ropes, baskets etc)	56	1.7	205	6.4	8.1	4 times as important
Herbal medicine	36	1.1	116	3.6	4.7	Over 3 times as important
Timber	27	0.8	103	3.2	4	4 times as important
Number of times products flagged as important in village surveys	911		2310		3221	
Percentage split between cash and non-cash		28.3		71.7	100 %	

4. Non-Cash Forest Income at Community Level: The Non-Cash Value of Forests to Different Kinds of Livelihood System

In many systems, communally owned forest is used for support to individually farmed plots or individually owned animals. For pastoralists living in the tropical dry forests of the Sahel and cattle-keepers in East Africa, the value of browse for much of the year is the chief value of forests. It translates into high food, cash and store-of-wealth values for their animals, and as a result, pastoralists have been good forest managers where they have rights to forest (Kerkhof, 2000; PROFOR, 2008).

For those farming in forest fallowing systems, the regenerative power of forest brings renewed soil fertility where population density is low; for those farming in transitioning / intensifying farming systems, forest fallowing looks after remoter farmer plots while those nearer to the house begin to be farmed with manure/fertiliser (examples of both in Kusters and Belcher, 2004). Farmers in many terraced farming systems in the world pasture animals in the forest, and bring them onto the terraces at night to deposit manure for soil fertility, or tether them where the manure is needed and bring cut- and-carry fodder to them (Dev and Adhikari, 2007).

For those living near tidal rivers and the sea, mangrove forest has a special value. Such forests not only protect farms inland from floods, but provide crustaceae and nurseries for young fish which grow up among the mangrove roots before they swim to the sea. Such livelihood systems always include a substantial fishing component (Shepherd et al, 2009).

5. Gender, Forests and NTFPs NWFPs

Paumgarten and Shackleton (2011) found that the gender of the household head affected both the household's susceptibility to shocks as well as the coping strategies adopted. Shackleton et al (2011a) found that women and children are the most common consumers of wild forest foods. Shackleton et al (2011b) find that women's roles are often not visible or acknowledged and discuss opportunities and constraints for empowerment. Sunderland et al (2004) found that African case studies generally illustrate the dominant role of women in marketing and final sale of NTFPs/NWFPs, including fuelwood, fruits and nuts, with the exception of some industries that are described as male dominated. Ireson (1991) found that women's forest activities in Laos contribute to household economies, particularly at times when households need extra food/cash. She notes that use is differentiated by type of forest area: women who access old growth and second growth forests use forest products mainly for subsistence while women who only access second growth areas are more likely to sell forest products. She suggests that women with only second growth access might have a more commercial view of the forest. Ireson (1991) says that all family members collect and use forest resources though women and children gather forest foods

and other NTFPs/NWFPs while men gather, hunt and cut timber for construction. Women do the majority of selling of products in markets, unless amounts are large or of high value.

6. The Morality of the Non-Cash Economy

There is a final aspect of the non-cash economy which is often forgotten. Money does not enter into all transactions, and in many of the contexts described, non-cash exchanges are still a very important part of daily life. In many of the societies described cash transactions may make up less than 50% of all economic activity.

Sometimes economic exchanges consist of no more than barter - one set of goods for another. But often they are invested with more meaning than cash transactions. Sons-in-law may have to give a proportion of the forest and agricultural goods they produce to their fathers-in-law. In many parts of West Africa, any approach to a chief has to begin by the offer of kola nuts. In Papua, negotiations about anything have to begin with the presentation of betel nut and lime to the elders. Economic benefits flow from these actions. Money is morality-neutral, but non-cash exchanges often carry a freight of respect for local customary law, for local authority and for the recognition that human interaction and exchange is more than a money transaction. So the 'non-cash economy' should not be written off as 'merely' subsistence, due to fade away in due course. It is often a parallel economy to the cash economy and one of great complexity. There is so far very limited recognition of this in the NTFP/NWFP literature.

7. Informal Employment in Small and Medium Forest Enterprises as a source of Food Security

Like that for NTFP/NWFPs, it is difficult to collate accurate data on SMFEs. Many enterprises have only one or two employees, and there are good reasons in many countries to stay small, and remain 'below the radar' as far as business registration is concerned. A set of laws and taxes may well come into play if registration is attempted which have been devised for much larger businesses, and which impose crippling burdens on small enterprises.

Osei-Tutu et al (2010) suggest that, for Ghana, the timber and furniture industries employ 17,000 chainsaw milling crews, with an average of 6 people in each; 264,000 people are involved in the chainsaw-milled lumber-haulage sector and 21,000 people involved in chainsaw lumber. 1,300 are chainsaw lumber brokers, each of which engages about 3 people; and 30,000 small scale carpentry firms employ about 200,000 people. NWFP estimates include 600,000 women in shea butter collection and 300,000 local bushmeat hunters. Shackleton et al (2011) found that employees in formal and informal forest enterprises are estimated at at least 45 million worldwide. MacQueen (2008) suggests that SMFEs contribute more than 50% of forest-related jobs in many developing countries.

In Kozak (2007)'s view, the growth of small SMFEs is outpacing medium SMFEs; growth is higher in the value-added sector (and lower in the commodity sector due to competitiveness, economies of scale and high capital requirements). SMFE growth seems very dependent on relevant markets. SMFEs require only small initial investment to set up which can make them accessible and attractive to the poor and in turn diversify their economic opportunities and improve their livelihood security. While large-scale, commercial forestry can play a role in poverty reduction, MacQueen (2008) argues that SMFEs offer better prospects because they help to secure local community resource rights; wealth is accrued locally; local entrepreneurship is empowered; social capital is created; and local environmental accountability are maintained.

MacQueen (2008) identifies biases against small scale enterprises and notes that there are inadequate market mechanisms to support small forest producers, and a lack of institutional mechanisms connecting groups and SMFEs to markets and policy practices that shape the business environment. SMFEs are often isolated because regulations and taxes may force them into the

informal sector and they are overlooked in national forest program processes. They are also isolated from buyers who may not know that particular products or services are available and from the financial sector who may not know of commercial opportunities to support SMFEs.

8. Valuing NTFPs NWFPs at National Level

Few studies have attempted to aggregate up to the national level the value of non-timber forest products. This is partly because resources are rarely available to do so. Little is known about the growth and reproductive characteristics of many or most NTFP/NWFPs. Investment in basic research to indicate what their sustainable exploitation would consist of is costly, and basic knowledge is often hardly known even for species which have been exploited for hundreds of years like Brazil nut (Sunderland, Harrison and Ndoye 2004). Barik and Mishra (2008) know that forests have a high value for local people in India, but observe that most NTFP/NWFP values are not being accounted for in State estimates. Babulo et al in Ethiopia (2009) note that in a sample of 360 households from 12 villages, forest resources contributed the second largest share of income after crops - ahead of livestock.

As Laird, McLain and Wynburg (2010) point out, NTFPs/NWFPs are in a curious position at national level in most countries. Few countries have explicit laws which govern their harvesting, and the challenge of valuing them is enormous. Inventories of all species used and sold would be impossibly costly to undertake, and they recommend only trying to inventory the half dozen most important sold in any location. The problem would be even more complex if all the NTFP/NWFPs commonly collected but more rarely sold were also considered. IUCN work has shown that, depending on location, at least twice as many species are gathered for home consumption as for sale (Shepherd 2012).

Fuelwood and charcoal are of high value everywhere and enormous volumes are traded annually, especially in Africa. In West African forests (Falconer 1990) chew sticks and wrapping leaves are among the most important exports from forest. They pass through many hands and end up in their millions all over West Africa in every market. But of course, unlike timber, no hard currency is generated by them, and most governments take little interest in such products.

In forest assessments such as FAO’s five-yearly FRA, it has proven impossible so far to capture the value of the main NTFP/NWFP sales (apart from fuelwood), let alone the value of NTFP/NWFP consumption.

An attempt was made in a Uganda study for FAO (Shepherd, Kazoora and Müller, 2012) to put a national level value on forest products. This was done by using regional per capita income figures for rural people, in a context where the percentage of income coming from a variety of sources was known in sampled villages. The country had been zoned, using a method developed in the past for CIFOR, so that patterns of high forest high poverty, high forest low poverty, low forest high poverty and low forest low poverty had been identified and villages sampled within those areas.

Table 4: Total annual value of forest products to rural people in Uganda, in millions of dollars

(Source: Shepherd, Kazoora and Muller 2012)

Forest Products grouped by category	CASH		NON-CASH		VALUE OF ALL FOREST PRODUCTS	
	\$ millions	%	\$ millions	%	\$ millions	%
Fuel	406	10.1	1,186	29.5	1,592	39.6
Building materials	346	8.6	655	16.3	1,001	24.9

Forest Foods	241	6.0	510	12.7	752	18.7
Fibre (for ropes, baskets, mats etc)	68	1.7	257	6.4	326	8.1
Herbal medicine	44	1.1	145	3.6	189	4.7
Timber	32	0.8	129	3.2	161	4
Total	\$1,137	28.3	\$2,882	71.7	\$4,019	100%

The results are startling. Firstly, only 28% of forest products are in the cash sector, while 72% are in the non-cash sector. Secondly, timber is of very minor importance among rural households, though house-building materials (sticks, thatch and fired mud bricks) are the second product after fuelwood. **Thirdly, a fifth - or including medicinal herbs a quarter - of the value of forests to local people is nutritional.**

Finally, a still larger picture lurks in the background. The study suggested a figure of \$4.01 Billion for the value of forest products to rural people in Uganda. But in fact this is made up of a 'normal' balance between rural sources of livelihood income in the two relatively settled Central and Western Regions, and an 'abnormal' patterns in the Regions which have experienced the most disruption from civil war and conflict with the Lord's Resistance Army - Eastern and Northern. How would the total value of forests products look if the 'normal' pattern were applied to these two regions as well?

We take as 'normal, in the context of Uganda, a pattern where - on average for rural people:

- 59-60% of livelihood income (cash and consumption) comes from agriculture
- 22-23% comes from forest (cash and consumption)
- 13-14% comes from livestock (cash and consumption) and
- 4-5% comes from employment and/or trade

Applying this pattern to the two 'abnormal' regions would show reliance on forest dropping by nearly a million dollars. We would see \$870,000,000's worth fewer products being drawn from forests in Northern and Eastern Regions. So we can deduce that forests are a vital support in the transition from war to peace during Uganda's post-war reconstruction phase.

9. What can be done to bring the value of forests for livelihood and nutritional support to the attention of policy-makers in a way they find compelling and interesting?

In FAO's Uganda report, (Shepherd, Kazoora and Müller 2012) some examples are given of ways to show how important forests are beyond the narrow forest sector.

Energy The Uganda Energy budget for 2011/2012 rose to \$514 million. Energy from the forest, used by rural people not only for cooking but often also for lighting and space-heating, is worth almost \$1.6 billion - three times as much.

Housing Ninety-seven per cent of houses in Uganda are directly constructed from forest products or are made of wood-fired bricks. Only 3% are made of concrete or other 'modern' materials. (UBOS 2009-2010). Building materials from the forest currently have a value of over a \$1 billion annually, while forest fibres (for making rope, string, animal traps, baskets etc provide the household with much of its farming and foraging equipment. Their annual value stands at \$325 million.

Health and food security In 2009/2010, Uganda's Health budget was \$319 million dollars. Funding, most of it from foreign donors, is largely spent on three diseases: HIV/AIDS, TB and malaria, and funding allocates \$10.4 to each Ugandan. The Chief Planner of the Ministry of Health said in 2010 that \$28 per capita would be required to provide the Uganda National Minimum

Health Care Package, which would also then be able to address other diseases and health care matters such as respiratory tract infections, malnutrition, and child and maternal mortality.

The FAO report suggests that every *rural* Ugandan, at least, can collect at least \$27-worth of health-giving foods from the forest annually (forest foods are of especial value for protein, vitamins and minerals lacking in the carbohydrate-rich farm diet) and another \$7-worth of herbal medicine. Herbal medicine is worth \$189 million dollars annually to rural Ugandans - nearly 60% of the national Health budget. The forest is thus vital for supplementing what government Health budgets can afford to provide, and absolutely essential for food security.

Forest food accounts for 21% of forest cash income and for 18% of all non-cash income. As noted above, forest food nutritional quality is probably more important than its quantity (Falconer, 1990; Falconer and Arnold, 1991). It is at last well recognized in the agriculture and food policy sectors that nutrition security is not the same as food security (Heidhues et al, 2004; ODI, 2002).

The numbers presented here invite the thought that rural people would be far worse off without these forest products. The task for forest valuation is perhaps to spell out more clearly what would be lost, practically, if the forest disappeared: and the additional costs to households and government that would result.

10. Recommendations

Critical constraints on improved understanding and management are data and information gaps. Current forest-related data collection is deficient in its representation of activities and benefits from forests that are not exchanged for cash, that are in the informal sector, and that are not recognized by forest authorities. Gathering such data systematically is necessary if the bulk of the economic contributions from forests are to be recognized and if action to improve the generation and capture of such benefits is to be possible.

Better information on the contributions of forests in the form of NTFPs/NWFPs is possible as a large number of research studies have demonstrated, but more methodological research is needed on simple and inexpensive techniques for data-gathering which will appeal to governments and multilateral organizations. Systematic data on these products, on different forms of tenure, and on how these benefits contribute to poverty reduction, are activities that will help decision makers recognize better the key economic contributions of forests.

Finally, an important part of the improved governance of forests is a more integrated approach to forest management – such integration concerning itself with greater cross-sectoral synergies, stronger interactions and connections across levels of forest governance, and improved engagement between public, private, and civil society actors. New approaches such as landscape approaches may be helpful in fostering this.

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36. Nelly-Diane Alemfack Efozo, Young Volunteers for Environment, Cameroon

Forest governance should be improved

Forest governance should be improved in my opinion, because the loggers do not always respect the canons of contracts with the competent authorities. This situation leads to a land grab of indigenous peoples and sometimes illegal logging. In the forest region of Cameroon, for example, people testify that "Moabi" disappeared. Once, Baka ate its fruit, retrieved oil based on its core, which allowed them to cook food, but also had therapeutic virtues related to the skin. Today, people are forced to travel miles to see a palm oil that does not belong to someone for the cooking oil, since the Baka culture did not create a field for planting to feed. Plots dedicated to community forest are occasionally used by loggers who cross the limits of their areas of operations.

After a few complaints, people are sometimes received the construction of a classroom that serves as their school sometimes without teachers. This situation does not contribute to solve the lack of food.

So faced to this situation, it is necessary to inform the loggers at the based on the place of trees, forests, agroforestry systems in food safety. It is important to strengthen the capacity of communities in advocacy so that they can even claim their right and not just leave NGOs to speak for them.

At least it is important to ensure that all environmental Operating laws are respected. It is also important that the government adopt a good policy for the reforestation of forest resources especially regarding the disappearance of trees in full as "moabi". Governments should require to logging, road construction to facilitate the flow of agricultural products in the villages due to the landlocked state roads especially during the rainy season, to avoid shortage on the market.

37. Subhash Mehta, Devarao Shivaram Trust, India

I am saddened at the news of Michelle Gaultier who tirelessly contributed to the e consultations.

I would like to bring to the table my experiences with the Government of Bhutan over the last decade in the effort to make Bhutan become the first country in the world to fully convert to organic agriculture, ensure the water bodies/ sub soil water is free of pollutants and agro chemicals.

I had been visiting Bhutan regularly since 2002 on the invitation of the officials of its ministry of agriculture. Subsequent to the meetings I had with the Ministers of Agriculture, senior officials and the Research Institutes during my numerous visits, I was invited in 2007 by the then Prime Minister (also holding charge of agriculture) to bring with me a group of resource persons for holding workshops at research institutes across Bhutan and for senior Ministry officials in Thimphu. The purpose was to facilitate and take forward the Prime Minister's goal for 'Bhutan to become the first country in the world to fully convert to organic agriculture, ensure the water bodies/ sub soil water is free of pollutants and agro chemicals' into a reality. The world of agriculture has a lot to learn from the Government of Bhutan:

The Honorable Prime Minister inaugurated our Thimphu workshop, June 2007, when I had the honor of sharing the podium with him to release the Organic Policy of Bhutan also declared that one of its research institutes had been converted and dedicated for research on following organic principles in agriculture, to meet the needs of the poor smallholder producers and went on to setting a tentative date of 2020 for Bhutan's conversion to organic agriculture.

Very soon the country's commitment for achieving these objectives was taken forward with the contracting of Dr A Thimaiah, a PHD from IIT Delhi in Bio Dynamic Agriculture, as consultant, attached to the Ministry. The import and use of chemical pesticides were also banned and following measures and decisions taken for meeting the needs of the rural poor smallholder producers:

- create an enabling policy for integrated producer oriented development and research
- public funds for the rural poor to produce and access nutritious food (self reliance),
- recognize the importance of natural resources (forest cover, animal husbandry/ wildlife)
- support rural human and institutional capacity building, funding of producer orgs (PC)
- aggregating of programs, schemes, funding, etc., all concerned Ministries/ departments
- gross national happiness (GNH) of rural communities and long time sustainability

The following links gives status of this programme:

<http://www.guardian.co.uk/world/2012/dec/01/bhutan-wealth-happiness-counts>
<http://www.guardian.co.uk/global-development/2013/jan/02/nature-teacher-bhutan-conservation-classroom>
<http://www.guardian.co.uk/global-development/poverty-matters/2013/feb/11/bhutan-first-wholly-organic-country>

Worldwide, over a billion people go hungry every day, even more are mal nourished and poverty among the rural smallholder producer communities is of serious concern, as they are getting deep into debt with the yearly increase in costs of external chemical inputs for conventional agriculture, reducing net incomes/ purchasing power, thus forcing large numbers to commit suicide.

The Bhutan model on organic agriculture should be followed by all developing countries for making 'Nutritious food being made accessible through integrated agriculture to the world population of about nine billion by 2050. This is possible by focusing on and using public funds to contract the successful farmers in each area for wide replication of their model, setting up producer orgs and staffing them with professionals, thus meeting the needs of the poor rural smallholder communities to follow 'Integrated Producer Oriented Development (IPOD)', putting them to work, following the local integrated low cost ecological successful agriculture, producing to meet their own nutritious food needs. This is in contrast to the high cost 'Market Oriented Development' system of conventional mono crop agriculture policy of most Governments, NARES, CGIAR, etc., which produces the quantity of food required, but being high cost is not accessible to the poor (being many times the farm gate price in the retail with shops overflowing with food stocks).

- The intervention of rural producer orgs/ company (PC) set up by rural producers (mostly following the local integrated agriculture) but staffed with professionals, to take over all responsibilities and manage risks, other than on farm activities of their members will ensure:
 - creating of human and institutional capacity
 - providing the required management,
 - encouraging natural regeneration, planting of trees and other forest plants as a source of nutritious food, fodder for livestock,
 - production of inputs and biogas,
 - recharging of subsoil water for drinking and agricultural lands, by protecting catchments, on farm water harvesting, production of nutritious food, bio gas, fibre/ fuel (animal droppings and bio mass for production of low cost inputs),
 - primary and secondary value addition to increase shelf life of produce for storage till prices peak, thus minimizing post harvest losses, etc.

This would reduce cost of production, deforestation, degrading ecosystems, hunger, Mal nutrition, poverty, effects of climate change, etc., whilst ensuring livelihood improvement of forest-dwellers, tribal's and the smallholder rural communities, water and nutritious food security and improving livelihood, net income and purchasing power:

Link provided by you to FAO's publication on [Forests for Improved Nutrition and Food Security](#) has most of the required evidence.

38. Kien Nguyen Van, Plant Resources Center of Vietnam, Viet Nam

Dear Sir/Madam,

In my opinion, there are 3 key benefits from forests and trees, that is **biological diversity, ecosystem/environments and last one- landscape**. They are heritages and values of community and human kind. These benefits are in the meaningful for long term for humankind, that provided frequently food and nutrition, medicine, even if livelihood for local community in a long time. In fact, these were under stability and sustainability in over past centeries. But over use and over exploitation of man destroyed and losed the balance. For me, I do not agree to any private own type to forest or forest land because above mentioned heritages/values could not divide in to small pieces. Small pieces will threaten and make lose the value forest as well as prevent against to effort of society in forestation and protection. Then we should raise fund for community and government to protect and develop rest of forest of the planet in line with strengthening awareness and action of whole society. At the time, forest also should is transferred and managed by community and government. These request determination of community and government by benefit in long term.

A big question/great challenges, that are livelihood of a lot of farmers in developing countries is lived on forest. That could damage to forest. Therefore, the benefit of currently generation is conflicting to the future generation. These is question of policy makers and researchers!

Best regards,

KIEN

Mr. NGUYEN VAN KIEN

Plant Resources Center of Vietnam

39. Patricia Tendi, FAO, Italy

Thank you for initiating this debate.

I think one key issue is obtaining better estimates/country data on forest dwellers i.e. who they are, where they live, and what they do to survive. This could mean greater collaboration within FAO in obtaining official statistics for the compilation of SOFA/SOFO/FRA etc. and within government ministries followed by greater joint analysis of data obtained, even funded by extra-budgetary resources if Regular Programme funding is not available. Basic statistical data would seem to be a fundamental requirement if there is going to be a policy shift in favour of the poor and hungry who depend on trees and forests.

(ii) Increased research and collaboration with fair trade entities as this commercial model favours smaller cooperatives, women and other disadvantaged groups - FAO's key constituencies.

(iii) Greater assistance and more consolidated information for small cooperatives to understand the legal procedures for patenting forest products, adding value locally and understanding and overcoming legal and market barriers to the sale of forest products would be helpful. Such support would help increase local incomes, thereby reducing poverty and increasing income available to spend on food. A pamphlet containing key points from the Voluntary Guidelines on Land Tenure aimed at forest dwellers and explaining, in accessible language, the benefits to forest groups could be produced.

(iv) Analysis of payment for ecosystem services might identify the true value of forests and how this might translate into monetary benefits for forest dwellers.

40. Florentino Rodriguez P., Comité de Defensa del Agua y el Paramo de Santurban, Colombia

[Original contribution in Spanish]

Apreciados amigos,

Les escribimos de Colombia. Muy interesados en su conferencia de este próximo mes de mayo sobre la importancia del Bosque en la búsqueda de la seguridad alimentaria y nutricional.

Vemos sin embargo que el enfoque que da la FAO es hacia países con hambrunas como Africa, donde los arbustos y la vegetación es importante para el pastoreo y recolección de leña para calefacción y la cocción.

No vemos que se correlacione el Bosque con el ciclo del agua y las cadenas tróficas.

Colombia es un país con aguas abundantes y pisos térmicos que nos permiten contar con diversidad de alimentos de acuerdo con la altura de los cultivos.

Sin embargo se cierne una gran amenaza y es la mega minería que se desplaza del África hacia Sudamerica.

Nuestras selvas y montañas guardan riqueza mineral y muchas transnacionales llegaron tras la invitación del gobierno Colombiano

Sin embargo, no contamos con experiencia en minería de alta montaña y se otorgaron por el gobierno concesiones sobre rios, quebradas y ecosistemas estratégicos como los paramos y el bosque alto andino y bosque humedo tropical.

Conocen también ustedes que nuestro país lleva ya 55 años de guerras internas entre narcotráfico, paramilitares y el ejército. Muy similar a lo sucedido en Africa.

Ahora el oro y los minerales estratégicos como el Coltan están en la mira de grupos irregulares y de las multinacionales.

Consideramos que las Naciones Unidas podrían desempeñar un gran papel, pues debemos anteponer la seguridad alimentaria sobre la minería metálica.

Díganos por favor si se interesan en el tema para enviar mayor información.

Saludos,

[English translation]

Dear friends,

We are writing from Colombia and are very interested in the upcoming conference in May on the importance of forests for food and nutrition security.

We notice, however, that the approach of the FAO is to countries with famines as Africa, where shrubs and vegetation is important for grazing and collecting firewood for heating and cooking. We see that Forests relate to with cyclic water and food chains.

Colombia is a country with abundant water and thermal levels that allow us to have variety of foods according to the height of fields.

But a greater threat looms and the mega mining is moving from Africa to South America

Our forests and mountain have a great variety of mineral resources and many transnational mineral companies came at the invitation of the Colombian government

However, we have experience in high mountain mining and concessions granted by the government on rivers, streams and strategic ecosystems as the moors and high Andean forest and tropical rain forest.

You also know that our country has now 55 years of internal wars between drug trafficking, paramilitaries and the army. Very similar to what happened in Africa.

Now gold and strategic minerals such as coltan are targeted by rebel groups and multinationals.

We believe that the United Nations could play a big role, because we need to prioritize food security with respect to metal mining.

Please let us know if you are interested in the topic to send more information.

Regards,

Ing.Florentino Rodriguez P.
Comite de Defensa del Agua y el Paramo de Santurban
Colombia,Sudamerica

41. UNSCN Secretariat, Switzerland

The UN Standing Committee on Nutrition (UNSCN) is the interagency platform furthering, coordinating and supporting joint efforts on nutrition across the UN system. We welcome the discussion on the benefit of forests and trees to food and nutrition security in order to achieve improved nutritional outcomes.

Food and agriculture consist of several sub-sectors one of which is forestry and tree crops. The agriculture sector, including forestry and tree crops, is best placed to influence food production and the consumption of nutritious foods necessary for a healthy and active live. Nutrition-sensitive agriculture / nutrition-sensitive forestry and tree production aims to maximize the impact of nutrition outcomes while minimizing the unintended negative nutritional consequences of relevant policies and interventions on the consumer. It is agriculture, including forestry and tree crops, with a nutrition lens that is needed, and does not detract from the sector's own goals.

There is increasing attention to addressing the multiple forms of malnutrition through agriculture and its sub-sectors. We would like to point out two main aspects of the importance of forestry and tree crops for food and nutrition security:

- Their products contribute potentially to livelihoods of many poor households especially in resource poor and food insecure settings and including during crisis situations like drought. e.g. South of Madagascar where in times of food scarcity people eat wild fruits and use forest as basis for their livelihoods in order to survive.
- Furthermore, forestry and trees play an important role as providers of fruits and other tree products like nuts etc that are important part of a healthy diet. The prevalence of Non-Communicable Diseases is increasing dramatically in many countries. Diet related factors are among the risk factors of NCDs. A healthy diet for the risk reduction of NCDs contains among others the regular consumption of fruits and vegetables, which are also provided by trees.

The Draft Action Plan for the Prevention and Control of Non-Communicable Diseases 2013–2020 that will be presented at the next World Health Assembly in May 2013 to Member States, affirms that enabling environments are important of which agriculture is one key factor. 'Support national

authorities to create enabling environments to reduce modifiable risk factors of Non-communicable Diseases through health-promoting policies in agriculture, food, trade, transport and urban planning' are essential in a world with rising diet related risk factors and NCDs.

Nutrition-sensitive agriculture addresses all sub-sectors of food and agriculture of which forestry and tree crops are an important one with high potential for improved nutrition, in terms of household nutrition security and healthy diet. The nutrition lens in forestry and tree production includes a consistent focus on nutritional outcomes and indicators within national policies and programmes to improve food and nutrition security and to combat the multiple burden of malnutrition (undernutrition, micronutrient deficiencies and overconsumption). At present there are limited experiences with this approach at scale and insufficient existence of technical recommendations to inform policy makers.

Q1. What are the **key challenges and bottlenecks hindering a greater contribution** of forests, trees on farms and agroforestry systems to food security? These could be as diverse as policy, legal, institutional, practical skills, data etc.

Insufficient investment: Governments and development partners need to increase budget allocations in support of sustainable forest management and rehabilitation of degraded lands. Depending on the condition of the forest, approaches may include protection, management and restoration. Investing in sustainable forest management could be a cost-effective way to support poor households that are vulnerable to food and nutrition insecurity. This could reduce investing in more costly social welfare programmes. Sustainable forest management will help mitigate the effects of climate change and will increase forest resilience to help vulnerable communities to better adapt to the negative impacts of climate change.

Inadequate tenure rights: Secure tenure is critical for household food and nutrition security. The lack of secure access rights and land tenure are a disincentive for many poor or marginalized communities and households to invest in managing land more productively, investing in required inputs. Improved tenure and access rights to forest resources could support more sustainable resource management for food and nutrition security.

Insufficient attention to Gender differentiated approach: Women farmers produce more than half of all food worldwide and currently account for 43 percent of the global agricultural labour force (FAO). We encourage more emphasis on a gender differentiated approach and this should be addressed in various political and programmatic issues.

Q2. What are some concrete examples of **innovative approaches, or good practices** that increase the contributions of forests and trees to food security and nutrition goals?

Evaluate forest foods: To make better use of forest foods for improved nutrition and diets, it is necessary to evaluate forest food's nutrient content and adopt advice on healthy diets and nutrition accordingly. Specific strategies according to health and diet related needs of particular populations or according to the characteristics of the specific agro-forestry zones should be elaborated. Some common nutrition problems and the potential role of forest food are summarized in CIFOR paper (Colfer, Sheil et al. 2006).

Develop forest foods: After understanding forest foods, development is needed. Agroforestry has the potential to contribute to human nutrition through increased production and availability of particularly nutritious fruits, leaves and other products through general diversification of diets. A study in Zimbabwe by the World Agroforestry Centre and Hanover University showed that many households consumed large amounts of fruit and generated considerable income from indigenous fruits. Within households, children were the main consumers of fruit. Research and development should focus on on-farm production of indigenous trees, production of new products from indigenous fruits, and expanded production of selected exotic species (Swallow and Ochola 2006).

Generate income from forests and trees: Where food and nutrition insecurity is related to limited opportunities for employment or income generation, income from forests and trees on farms can make a significant contribution to rural households' income and their food and nutrition security. Also, the creation of small or medium-sized forest-based enterprises can help secure better market access and add value to harvested products (FAO 2011).

Increase local control: A clear sense of ownership helps give local people the sense of responsibility to conserve forest resources and the incentive to invest in sustainable management.

Extension workers to be trained in relevant nutrition and dietary aspects of forest and tree crops.

Q3. What is needed for food security policies and strategies to recognize the contributions and value that forests and trees bring?

Collaboration: To increase the role of forests and trees for food and nutrition security, government agencies responsible for forestry need to work more in collaboration with organizations beyond the forestry sector. This includes closer collaboration not only between forestry and other agricultural governmental agencies, but also with relevant sectors like health, education and social development.

Nutrition-sensitivity: Challenges are how to make respective policies sensitive to nutrition without detracting from the sector's own goals. How to incorporate nutrition outcomes and objectives right from the planning stage. How to sensitize politicians and decision makers about this necessity.

Monitoring and assessment: Monitoring and impact assessment studies need to give more attention to understand the links between agroforestry, nutrition status, and health. Much more work is needed in this area. One example is Swallo and Ochola (2006) who present a simple conceptual framework of agroforestry, health, and nutrition linkages that focuses on five pathways between agroforestry and health, dubbed the MINER pathways: M—medicinal plant conservation, domestication, and propagation; I—income earned and inputs saved through improvements in the farm resource base and products for sale; N—nutritious agroforestry foods, including fruits and leaves; E—changes in ecosystem structure and function that affect disease risk and transmission; and R—responses of agroforestry priorities and program design to changes in farmers' circumstances resulting from health and nutrition problems. In all these efforts, a gender differentiated approach is key.

42. Peter Steele, Australia

Investing in Agro-Forestry Industries - Bhutan

It is a considerable pleasure to browse the FSN contributions from across the globe - the ingenuity of ideas and opportunities listed, and the examples shown by others. 'Bhutan and organic agriculture' catches the eye from the work and reporting of your Indian correspondent Subhash Mehta of the Devarao Shivaram Trust, with his enthusiasm for the novelty of Bhutanese decision-making that may encourage others. Small and isolated, the country needs to capture the interests of others that investments may follow. The need for investment in agriculture is essential; and something that I have touched on before.

Access to the Internet

The computer screen, the Internet and Google provide access to the world; and Bhutan is no exception. Government and its development partners provide information that opens the country

(i.e. all countries) to anyone interested. But it also helps if, like Subhash Mehta, you have been there or worked there – it helps to put issues into perspective.

Living with happiness

Many readers will relate to the indicators for '*Gross National Happiness*' that were first promoted by Bhutan from the 1970s-on as a measure of quality of life that would help balance the more familiar '*Gross Domestic Product*' used by economists, national managers and others just about everywhere else to determine and compare the performance of a country and its economy. At the time this reflected the modernization of Bhutan as it first opened up to international trading but also, and more importantly, it reflected the cultural ethics of a country grounded in the Buddhist faith as the basis for the spiritual welfare of its people.

Organic agriculture

Organic agriculture is different, however, and the shift in production approach, technologies and more represents Bhutan and its economy working in the reality of the market place - this requires investment. Organic agriculture has been in the pipeline for many years, and you can read a recent interview with the Bhutanese Agriculture Minister Pema Gyamtsho at <http://www.guardian.co.uk/global-development/poverty-matters/2013/feb/11/bhutan-first-wholly-organic-country?INTCMP=SRCH> describing his thoughts. This article, referenced by Subhash Mehta, is buoyant for the opportunities available but what it doesn't cover is the reality of the investments required in what is one of the poorest countries in the world.

Challenges of a poor country

Therein lies the dichotomy of people living in largely subsistence poverty but surrounded by the natural wealth of the soil, land and forests. Bhutan is home to >740,000 people, but population growth is rapid and there are expected to be more than one million people by 2050 – living on the basis of the same small agro-productive areas of land. Estimated 23% of the population lives in poverty, and estimated 30% of rural communities are seriously poor as exemplified by chronic levels of malnutrition reported for rural children (>30%); the more remote the communities, the more they are disadvantaged.

Agro-forestry production provides the basis for food, housing and family security for the majority people in Bhutan. Agriculture provides 17% GDP annually and employs 45% of the labour force, but this underlies the wealth of the country derived from power generation, minerals extraction, cement manufacture and other SMEs. Less than 5% national earnings are derived from agro-forestry activities.

Land industries

Agro-forestry is a traditional industry with the constraints of low-input/low-output systems that characterize subsistence production everywhere that people remain isolated and in poverty. There are none of the more advanced agro-production techniques typical of SE Asia; even those found in neighbouring India – use of fertilizers, high quality hybrids/seeds, pest/weed control, etc. and cropping is typically annual, post-harvest losses are high and crops are poorly stored for use in the home or for sale into domestic markets.

Bhutan is unable to feed an expanding population, and up to 35% of rural families face severe shortages of food for 2-4 months each year. Government have targeted improved agro-productivity, rural industries/enterprises and more employment as a means of boosting security, but the challenges of raised productivity, etc. are daunting in a country with strictly limited agro-production potential. Areas of crop production are scattered – there are few options for bulking up produce by area, and the result is high logistic/transport costs and damaged materials. Further,

producer areas have little or no surplus labour, and *all* production is labour-intensive. Migrating agro-populations are expensive and sometimes fickle and unreliable.

And the long-term view for availability of skilled labour is pessimistic with the majority young educated people choosing non-vocational work given the higher quality of life to be gained. The Royal University of Bhutan, for example, offers '*Biological sciences & agriculture*' and '*Natural resources*' and '*Business studies*' – fine for the next generation of agro-scientists, extension workers, businessmen, etc. but what options for the majority people – where are the vocational agro-forestry training courses, rural credit resources, techno-financial information and more that will help them make the changes required?

Investing in land industries

Investment in agro-forestry is a requirement of all government strategic planning, but herein is the paradox of a country that acknowledges an inability to feed itself from its own resources, but which has significantly reduced the allocation of the national budget spent on agriculture each year during the past 40 years. From a national budget of around US\$730M in 2010 (*of which >50% was supported by interventions from India*), <6% was allocated to agro-forestry investments. Forty years earlier '*agro-forestry*' had attracted almost 50% budget allocation.

Instead, greater priority has been given to spending on infrastructure, power generation, tourist facilities, industries and other income/employment generating sectors. And, if government are not spending on '*agriculture*', who will be expected to do so? How will the different objectives contained in the various strategies to which the country subscribes (including FYP #11) be met? Who will invest in the country?

Summary

Drawing attention to the paradox of investment required of agro-forestry in Bhutan is by no means a critique of this delightful, culturally interesting and staggeringly beautiful little country in the high eastern Himalayas. It is simply one for which the reality of the marketplace and limited funding have to be considered alongside the social investment required of reduced risks of food insecurity and improved nutrition for large numbers of people. *Difficult choices then.*

This has been an interesting debate. Well done everyone.

Peter Steele
Melbourne
28 February 2013

PS. Subhash Mehta's messages were also important for his reference to the recent death of Michelle Gaultier. A more competent and friendly co-worker would be difficult to find. She left her intellectual legacy with many of us who once worked with her. She will be missed.

43. Doug McGuire, Forest Resources Assessment Team FAO, Italy

At present, many cities are facing the consequences and the problems resulting from unsustainable use of spaces, resources and energy in and around urban areas. The enormous growth of urban population recorded over the last decades across the planet, is creating new needs and demands, and is moving dramatic poverty to cities - guaranteeing food security and affordable fuel resources for cooking for all is one of the biggest challenges to be faced at the beginning of the so called Urban Millennium.

Urban and peri-urban forestry and agroforestry can have a crucial role in improving cities' resilience and in facing the increasing poverty, lack of food security, air and soil pollution, and occurrence of human diseases in urban and peri-urban areas. Well designed and managed tree systems in and around cities can produce good quality food and non-food products (such as fruit, timber, wood fuel, natural medicine) thus improving incomes, nutrition security, as well as health conditions for all urban dwellers. The presence of trees and forests also improves the efficiency in watershed functioning and the quality of water, and therefore is essential in improving agro-pastoral systems in bordering lands. Furthermore trees can play a crucial role in providing fodder and shade to cattle, indirectly contributing to food security. By improving the food chains within cities, trees can also support the development of local markets and the generation of jobs and incomes for the local population. The resulting competitive price of local food would make it accessible also for vulnerable people, thus guaranteeing food and nutrition security to the poorest.

In rural areas as well, agroforestry can play a key role in improving food security, livelihoods and environmental stability. When designed and implemented correctly, agroforestry combines the best practices of tree growing and agricultural systems (crop and livestock), resulting in the best and most sustainable use of land.

Highlighting trees and nutrition security linkages is therefore crucial to face the challenge and reach one of the eight Millennium Development Goals: ending hunger and guaranteeing food and nutrition security to all. A multisectoral and multi stakeholder approach, involving practitioners, policy and decision makers, civil society, scientists, is required to cope with this challenge. We would like to thank Forum moderators for creating space for dialogue on this most relevant topic, as well as everyone who contributed to the discussion. From 13-15 May 2013 the International Conference on Forests for Food Security and Nutrition will be held at FAO, in Rome. The Forest Assessment, Management and Conservation Division is holding a side event on agroforestry policies for food security and climate change; we would like to take this opportunity to invite all of you to attend both the conference and our side event.

Doug McGuire, Team Leader
Forest Resources Assessment Team
FAO Forestry Department

44. Barbara Burlingame, Nutrition Division, FAO, Italy

I would like to thank everyone for the useful and insightful contributions to the Forum. The discussions clearly reflect the various ways forests and trees can contribute to food and nutrition security and sustainable diets.

Many contributions have identified the linkages to nutrition, from capitalizing on existing indigenous knowledge to making the rural-urban linkage in forestry and nutrition. We have widespread agreement that ending hunger and malnutrition requires a multisectoral approach, and that forests and trees are fundamental in achieving sustainable solutions to these problems.

Sincere thanks are due to the organizers for initiating this highly participatory global discussion on forests for food and nutrition security, and, again, to all the participants for their very substantial and high-quality contributions.

We look forward to meeting many of you at the International Conference on Forests for Food Security and Nutrition from May 13 to 15, 2013, at the FAO (Rome). The Nutrition Division has been particularly involved in the preparation of Parallel Session 3 (The Role of Forests and Trees in Sustainable Diets) and we invite you to attend so we can continue with these lively discussions.

Yours sincerely,

Barbara Burlingame

Principal Nutrition Officer (ESN)
FAO

45. Fred Kafeero and Eva Muller, facilitators

Dear Forum members,

We would like to express our sincere appreciation for the valuable contributions made on our online discussion. We received a rich diversity of responses from a wide range of practitioners, experts and people working at grassroot levels, giving perspectives from developing and developed countries. The concrete cases and good practices you offered in the discussion attest to the important role of forests, trees on farm and agroforestry systems for food security and nutrition in different agro-ecological contexts.

A number of you outlined the policy, legal and institutional challenges and bottlenecks that hinder that contribution. You also offered suggestions on overcoming these challenges, including dealing with Governance issues, generating relevant data, placing emphasis on cross-sectoral approaches, and going back to the roots of educating the young generation on these issues.

The discussions further confirmed that forests, trees and agroforestry systems contribute to food security and nutrition in many ways, but such contributions are generally not understood by decision-makers. Coupled with poor coordination between sectors, the net result is that forests are mostly left out of policy decisions related to food security and nutrition.

We recognize one contributor who had concerns about the genuineness and intentions of FAO in running this on-line discussion. Our role is to provide you with space and opportunity to air out your views on this subject, so that in the process, you help us and others appreciate where the challenges lie, and what possibilities are available to address them.

We reiterate that your valuable contributions will be synthesized and highlighted in the deliberations at the International Conference on Forests for Food Security and Nutrition which will be held from 13-15 May in Rome (<http://www.fao.org/forestry/food-security>). This will indeed provide a good opportunity for the wide range of participants in the conference to discuss and make concrete proposals to deal with the bottlenecks. The conference participants will include policy-makers from National ministries relevant to the topic, scientists; practitioners; the private sector; United Nations agencies and other international organizations; non-governmental organizations; community and farmers' organizations; and indigenous peoples' groups.

FAO will ensure that the key messages and recommendations from the conference are communicated and integrated into broader policy dialogues on food security and nutrition at the global, regional and national levels.

Thanks again,
Fred and Eva