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Food-security and pro-poor oriented forest and landscape management: Evidence from initiatives in Sri Lanka.

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Abstract

Sri Lanka is a global biodiversity hotspot and boasts a large land extent occupied by agriculture and agroforestry. Forest and tree-based solutions offer opportunities to reduce rural poverty and food and nutrition insecurity, exacerbated in rural regions that are more vulnerable to climate change. Accordingly, enhancing forestry as a means to improving rural conditions through livelihood opportunities is considered by the government as an important measure. This article reports the initial results from such a project that considers piloting food and medicinal forests and related value chains. It presents the assessment of socio-economic impacts of past forestry management interventions that could help develop a roadmap for innovative food-security and pro-poor oriented forest and landscape management practices. It also describes the efforts made to ensure the sustainability of project results. The project results can help in promoting community-based forest management that can be resource efficient and socially inclusive within the targeted populations of the post-conflict region. Ensuring social stability through such forestry interventions and enhancing community knowledge on landscape management has long-term favourable implications on creating a green economy. It advances efforts as part of the United Nations Decades on Ecosystem Restoration and Family Farming.

Keywords: Food security, Nutrition, Species enrichment, forest business development, Sri Lanka

Introduction

The Sustainable Development Goals, the Paris Agreement on climate change, and other commitments place great responsibilities on countries and offer visions for the future and provide hope of more collaborative efforts to achieve sustainable development, ensure food security, eliminate poverty and mitigate climate change (FAO, 2019). As means of achieving these goals, integrated and coherent approaches and frameworks such as food security and nutrition (FSN) in relation to forestry are thus highly relevant today. There are a number of food security related priorities in the legislative and policy frameworks of Sri Lanka, mainly due to the extensive rural poverty alleviation focus of the elected governments and also due to the large agricultural footprint in the economy. While there had been a very orderly articulation of policy with respect to local food production and supply in number of historical as well as recent policy documents (i.e., National Agricultural Policy: drafts in 2007,2014, and 2021), policies and legislative articles that view food and nutrition security in cross-sectoral perspective are rare. Similarly, the national nutrition policy, which has been drafted mainly by with health sector stakeholders in focus (i.e., the National Nutrition Policy of 2010), does not seem to recognize adequately a cross-sectoral strategy with food sector. Further, the cross-disciplinary food and nutrition focus is minimally present in impact assessments and program evaluation frameworks. In this context, efforts towards a more integrated policy-making on food and nutrition security is relevant in the forestry sector in Sri Lanka.

With this broader objective, Sri Lanka joined hands with FAO in 2018 to develop a framework of food and nutrition focus focusing on the forestry sector, firstly through a benchmarking exercise of existing institutional capacity on FSN in forestry, and then through a technical cooperation program, which includes an impact assessment and a roadmap for including FSN for forestry. Considering that the forest cover in Sri Lanka, which is 29 percent of the land area (UNREDD, 2017; FAO, 2015), is constantly challenged by other competing land uses, most notably from agricultural land expansion, a joint orientation of the FSN goals is likely to enhance the resilience of rural livelihoods and the sustainability of the landscape by utilizing the synergies between agriculture and forestry sectors.

In this article, we discuss the preliminary policy and programming basis, recent programs which paved way for the current understanding of FSN orientation to forestry, along with evidence from the evaluations carried out during the technical cooperation program.

Methodology/approach

PAST POLICY EXPERIENCES

Community orientation was captured into forestry policy and programs as early as in 1980s under the Community Forestry Project (CFP). The community woodlots recommended under the Community Forestry Project (CFP) in the 1980s do not seem to materialize all benefits as planned (Dept of Forest Conservation, 1995). The reason for this apparent rejection of the idea is attributed to the fact that basic unit of rural community is not the village, but the household. Due to number of socio-political influences the collective potential of village has deteriorated over the years.

In a revived attempt to pursue the objectives of community forestry, ADB-assisted Participatory Forestry Project (PFP) supported the implementation of a social forestry program in 1990s, which involved the local community in developing private woodlots and forestry farms, and the strengthening of extension activities to promote non-forest tree planting. Among the incentives provided to the farmers under the PFP are a 25-year leasehold; freedom to choose the tree species; and food aid for labour inputs in the establishment of farmers' woodlots, protective woodlots, and nurseries (De Zoysa and Makoto, 2008).

Consolidation of forest-community interaction in context of an agricultural landscape was attempted in the Forest policy Master plan (1995) of Sri Lanka after an extensive stakeholder consultation. However, actual implementation of FSN has been limited to home garden support in rural communities. An instance of FSN benefits is observable in the farmer woodlot programs which allow food crop cultivation as an under-crop during the first three years of the timber stands which were formalized under FSMP. Indirect FSN benefits of farmer woodlots are derived through from thinning of timber species and eventual felling after 20-25 years of stand (Dept of Forest Conservation, 1995).

RECENT PROGRAMS AND LESSONS

Among the more recent national initiatives, two interventions can be highlighted as noteworthy in relation to the rural and forest-based focus of the current TCP. For instance, the current national home garden development program initiated under the Ministry of Agriculture is supported in the following ways: first, integration of export-oriented crops into the home garden setting and second, expansion of fruit tree composition in the home garden structure. The focus can be detailed at some length as follows.

- One version of the Home Garden Development Program (Dept. of Export Agriculture, 2017) was initiated with the aim of uplifting the economic capability of women while enriching the Kandyan home garden ecosystem, the program supported women to establish home gardens featuring export agricultural crops. Crop composition of home gardens was determined based on the preference of the householder as well as climatic suitability for the region. All women beneficiaries have been trained on good agricultural practices (GAP) for home gardening and productivity improvement of their existing home gardens. In 2017, 140,904 home gardens were established and 125,910 home garden units were successfully completed for 2018. Overall, an

ecosystem-based approach favouring higher species diversity in enriching the existing home garden system to feature export agricultural crops has been practised in the most recent interventions.

- A second version of the National Home Gardening Initiative (Ministry of Agriculture, 2018) aimed to raise the national food security by increasing production of home gardens. The initial stated objective was to target 65,850 cultivators. The mechanism of support was mainly by providing fruit plants and seeds to the selected households. This is a targeted program that focused on selected agro ecological areas where home garden development was potentially expandable. The leading feature of the intervention was the ability to fit the introduced species into the existing ecology of Kandyan home gardens (KHGs) seamlessly since the species introduced closely aligned to the 5 - layer canopy structure of KHGs.

As part of the current Technical Cooperation Program (TCP), consultations with Community based Organsations (CBO) were carried out in the selected sites in order to develop a roadmap for the integrated focus. Focused group discussions were conducted with 35 CBOs.

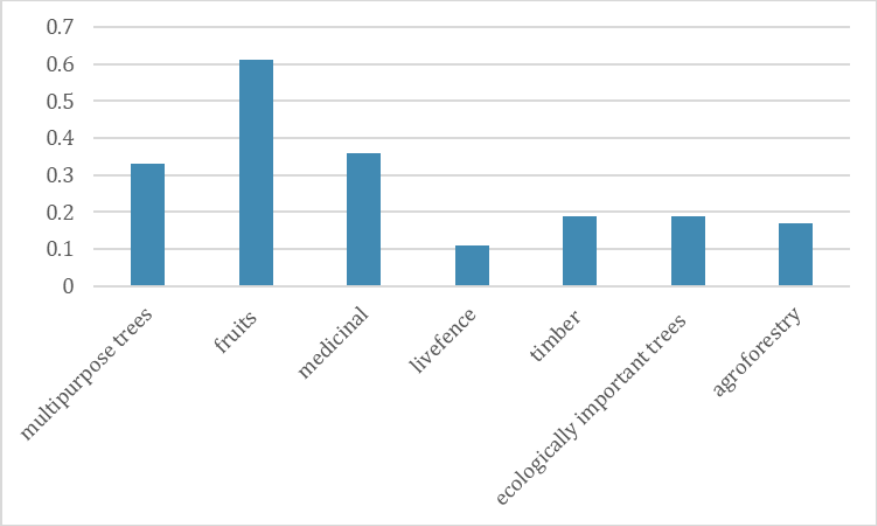

Fig. 1: Classes of species needed for enrichment of the landscape in Kahatagasdigiliya (Dry Zone site)

Results

The need for enrichment of the landscape via introduction of species was notable in all the community consultations. Fruits and multipurpose species were overwhelmingly favoured by the community (see figure 1). The observations made at the community consultations generated a list of trees/plants under each of the above classes for incorporation into the landscape (see table 1).

Table 1: Species selection by the community under each purpose

Objectives	Species based on community preferences
multipurpose trees:	*Cocos nucifera*, *Areca catechu*, *Artocarpus heterophyllus*, *Tamarindus indica*
fruits:	*Mangifera indica, Carica papaya, Punica granatum, Psidium guajava*
medicinal:	*Solanum virginianum, Cardiospermum halicacabum, Zingiber officinale, Curcuma longa*
Live-fence:	*Citrus aurantiifolia, Borassus flabellifer, Opuntia dillenii*
timber:	*Khaya senegalensis, Tectona grandis, Azadirachta indica,*
ecologically important species:	*Terminalia arjuna, Madhuca longifolia*
agroforestry:	*Aloe vera* with woody species, *Zingiber officinale, Curcuma longa* with woody species*

* *Economically important species such as Aloe vera and Turmeric are favoured as a reaction to several government land allocations to agribusiness companies in 2019 and 2020*

There was extensive evidence to support that rural economic diversification was limited by factors such as water shortage and wildlife threats in most of the CBOs interviews. Based on the views of the CBO representatives, a number of priorities were identified as activities with potential to be developed in association with forestry (see figure 2) with the goal of diversifying the rural incomes.

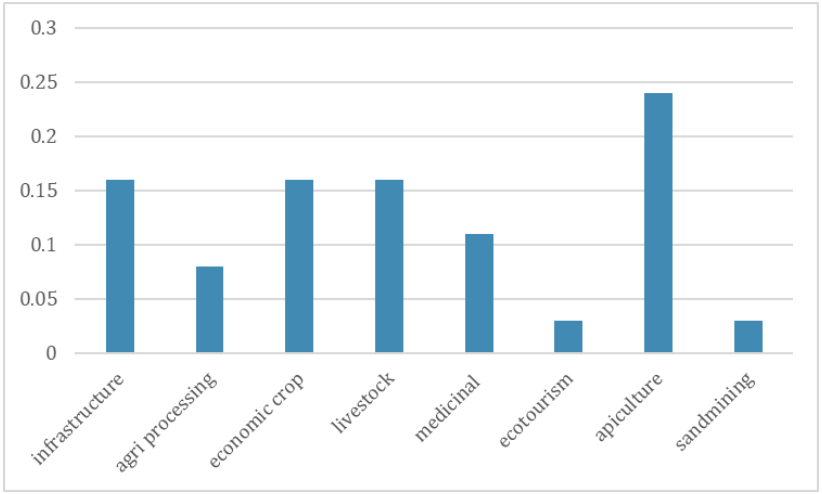

Fig. 2: Prioritized needs for business development related to forestry and agriculture

On the figure 2, infrastructure captures the stated needs to establish of agrowells, development of water canals, and storage facilities for field crops such as onion. Under agro-processing, support for coconut oil processing was requested. Apiculture was the most highlighted business opportunity identified by the community representatives interviewed. The potential for agroforestry was detected in continuation of the existing woodlots which have reached maturity and inclusion of new land with continuous benefit flows. However, the constraints in the form of water and threats of wildlife (mainly elephants) could adversely affect the plans.

Discussion

Extraction of non-wood forest products (NWFPs) largely remains unmonitored, and as a result, how it affects the biodiversity of forests is not well known. It is recommended that there is routine updating of NWFPs under the edible and medicinal headings and extraction be recorded. When the extraction rates increase due to high market demand, it is recommended that research and development efforts be directed towards possible domestication of such plants into the home gardens or the transitional forest areas. Such programs will reduce the pressure on the protected areas and buffer zones. It is also recommended that in cases where NWFPs have high foreign market values, the community be trained in both conservation of the respective plants as well as primary processing in order to add value locally (rather than removing the raw material, often in excessive quantities from the forests).

While the dense and sparse forest cover has been declining over the years in the Sri Lanka, the relative magnitude of area under home gardens has increased. Home gardens carry a high density of tree species, more so in the wet zone where the tree density could be as high as 584-1284 trees per ha.The Dry zone home gardens are less dense with tree densities varying from 57 to 480 trees per ha (Ariyadasa, 2002). Importantly, of the 10 leading tree species that dominate home-gardens in Sri Lanka, 4 species have direct food outputs. It is recommended that tree species with food value be incorporated in assisted regeneration programs as well as buffer zone restoration.

Ecotourism which holds promise to support forest–adjacent communities in terms of additional income generation is very poorly developed in Sri Lanka. Due to lack of community participation in managing conservation forest areas, the space for community to work with Forest Department in ecotourism is limited to only a few services such as providing safari jeeps, guiding and logistic supply (i.e. relatively cheap food and accommodation for visitors).

Health tourism, especially targeting ayurvedic medicine, is gathering momentum and there is a growing tourist demand for spice and herb gardens. This emerging market can be capitalized by the forest managers directly and by home gardeners indirectly through promotion of endemic herbs and medicinal plants as part of the ecotourism platform. According to unpublished sources, the bulk of the raw material for local medicines is imported due to lack of organized supply chains for plant parts and the lack of primary processing agents at source locally. Therefore, necessary facilitation, monitored extraction, sustainable up-scaling the supply of plant material and an enabling environment for primary processing are important steps to be considered in order to integrate medicinal plant value chains to community forestry incomes.

The absence of attention to forestry in the food policy certainly limits cross-sectoral dialogue that is advocated in the present framework. In order for the food and nutrition policy to pay attention to forestry in earnest, there has to be more conspicuous involvement between and community and forests. Further, policy attention is mainly captured by numerous inefficiencies in agricultural lands at the expense of overlooking the potential food gains from forests. However, since forests are an integral element of agricultural landscape, in terms of numerous ecosystem services in watershed protection, the planning process should pay attention to conjunctive use of agriculture and forests for food and nutrition needs.

Conclusions

The previous program efforts focusing on community and social forestry have planted the seed of participatory management of forestry resources into the Sri Lankan forestry policy framework as evidenced in the thrust areas of the Forestry Sector Master plan of 1995. However, the forest-community interface has not seen significant improvement due to a lack of landscape-based management approach to Sri Lankan forestry.

Incorporation of Food and nutrition security provides a solid basis to community engagement in a landscape level approach to forest and natural resource management.

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The views expressed in this information product are those of the author(s) and do not necessarily reflect the views or policies of FAO.

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