



3.2 Community participation in sustainable forest management, Sri Lanka

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Introduction

Sri Lanka is home to forests of striking variety, from evergreen forests to unique pygmy forests and different types of grasslands. This variety is due to differences in rainfall, altitude and soil. Forests cover around twenty percent of the total land area.¹ Most of the remaining forests in Sri Lanka consist of dry zone forests, located mainly in the northern and eastern regions of the country; the tropical wet forests occur as small blocks, often less than 10,000 ha in extent. The last remnants of the once widespread mid-Miocene tropical rain forests can now be found in fragmented lowland rain forests.

In November 2003, the Government of Sri Lanka ratified the United Nations Framework Convention for Climate Change (UNFCCC).

In its Initial National Communication (INC), submitted to UNFCCC in October 2000, the country identified eight sectors that are considered by experts to be the most vulnerable to the impact of global climate change in Sri Lanka. One of them is the forestry sector. The INC considers it highly likely that longer and more frequent periods of droughts will increase the risk of forest fires in Sri Lanka, and will threaten the natural regeneration of forest. This will result in the urgent need to adopt effective adaptation strategies.

The biggest impact to the climate in Sri Lanka comes from the forestry sector, particularly deforestation and poor management of forests. Dr. Sumith Pilapitiya, Lead Environmental Specialist for the South Asian Region of the World Bank, notes that, "Sri Lanka is a biodiversity hotspot, so several issues will be addressed by conserving forests; one of them will be climate change. Approximately 70 percent of Sri Lanka's climate change impacts will emanate from the forestry sector if not managed properly. This is an overwhelming figure; therefore, the forests must be protected" (CIRAP 2009).

The question is how to extend sustainable forest management (SFM) so that combating and adjusting to climate change can form an active part of the work, leading to effective mitigation and adaptation actions. This paper shows that community participation in SFM is not only a beneficial factor, but an indispensable one in the fight against the adverse effects of climate change. The Sri Lankan case, drawn from the work of the Global Envi-



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Environment Facility's Small Grants Program (GEF/SGP), implemented by the United Nations Development Program (UNDP), provides prime examples of how community involvement in SFM leads towards effective climate change mitigation and adaptation.

Community participation alone is limited, however, in its ability to exert influence on a large scale. Good governance and policies are needed to complement, support and encourage community participation. This paper outlines the successful work of GEF/SGP Sri Lanka and the policies and methods within the forestry sector that are working effectively toward climate change mitigation and adaptation.

Forest governance and policies

Deforestation is one of the main environmental and social problems in Sri Lanka. There is a direct link between climate change and forests. Forests yield numerous products and have a vital role in the protection of soil, water resources and biodiversity. Traditionally, the communities of Sri Lanka managed their forest resources with great care, while protecting the natural balance of the ecosystem. During five and a half centuries of colonization, however, the country suffered under colonially imposed land-use policies that damaged the natural forest. In 1886 the national forest reserve consisted of about 80 percent of the land area; this figure has dwindled to about 20 percent (see footnote 1). Plantation crops, expansion of agriculture, settlements, rising incomes and changing lifestyles have caused over-exploitation of the forest.

Several policies, action plans and programs seek to solve environmental challenges with regard to forestry and climate. The most crucial policy document is "Caring for the Environment 2003–2007 — Path to Sustainable Development (CFE)." CFE incorporates an overarching national environmental policy (NEP), the first in the country's history. It is intended to allow forest management to move forward in a more meaningful and effective way, paving the way to sustainable development. Within CFE the NEP recognizes the importance of the forestry sector with regard to climate change and calls for several actions to be taken. Most important to this end are seven strategies:

- adoption of conservation and sustainable resource use;
- a participatory approach to the management of forests;
- recognition of local people as stakeholders and beneficiaries;
- demarcation of definite boundaries and adoption of strict protective measures to stop any activity with adverse impacts;
- strengthening of protection and promotion of timber production from non-forest sources;
- propagation of non-timber species; and
- promotion of agroforestry (MENR 2003).

CFE stresses the involvement of all relevant stakeholders, collaboration among them, and states that partners in implementation shall be "government ministries, including those of the provincial councils, government departments, the provincial administration, statutory boards, non-governmental organizations, the private sector and the general public" (MENR 2003, 7). Such partnerships can be assured only if programs are planned and executed in a collaborative manner, with strong links between different stakeholders.

This goal arises from many years of experience with failed centralized forest management approaches. These had to be redirected and reoriented, which resulted in the National Forest Policy (NFP). Revised in 1995, it recognized the importance of developing participatory approaches, particularly with local communities, who are of crucial importance because they possess valuable traditional knowledge and experience. This approach to forest management would optimize the benefits to these communities while ensuring the sustainability of the forest resources.

The NFP is still seen as a crucial and comprehensive policy document. One of the sectors of Sri Lanka's INC deals exclusively with SFM and recommends the implementation of the NFP, whose objectives include conserving forests for posterity, with particular emphasis on biodiversity, soils and water as well as historical, cultural and religious values. Despite NFP's focus on participatory approaches, INC focuses on large-scale projects. Numerous programs focus on participatory approaches to forest management and to climate change mitigation and adaptation.

The Small Grants Program for Operations to Promote Tropical Forests (SGP PTF) was carried out by UNDP in Sri Lanka from 2004 through 2007. This program complemented the existing Small Grants Program and was a landmark effort by the international community to strengthen the role of local people in forest management. Most of these have a direct link to climate change mitigation or adaptation. The main focus of SGP PTF is small, innovative, forest-related projects by non-governmental organizations (NGOs) and community-based organizations (CBOs), which could then serve as the basis for understanding and policy guidance.

The thematic foci of the program were participatory forest biodiversity conservation, development of alternative livelihood initiatives and enhancement of skills and capacities of local communities, SFM with community participation to ensure sustained delivery of better forest services and better delivery of forest goods, multi-sector partnerships, and promoting the development of an alternative forest resource base.

Community participation

People living in the buffer zones of forests have used their forests for generations and are a critical part of forest management. They have observed how climatic variations and long-term climate change affect the region, either in the forest itself or in the buffer zone. It is they who need to be consulted, and collaborated with, in order to ensure effective climate change mitigation and adaptation plans. There is to date only a slight interest in effectively engaging such communities to manage fast-dwindling forest resources, yet it is imperative to focus much more on community participation. Experience in Sri Lanka shows a high success rate in doing so, and new policies and programs increasingly include community participation.²

The Human and Environment Development Organization (HEDO) is a local NGO working in the Kegalle District on one of the SGP projects. They introduced micro-hydropower systems, using the water of the forest to generate electricity for several villages in the

buffer zones. Villagers formed small self-help groups, working as a team and discussing their needs. Alternative livelihoods were introduced and local products such as treacle and jaggery³ were linked to the national market. Because of the electricity provided all villagers now see the value of the forest. They actively protect it from intruders, forming a social fence. No longer do they encroach upon the forest or cut valuable timber there. This clearly contributes to stopping deforestation, which is a crucial factor in climate change mitigation.

Mr. Peiris, the local operator of one of the newly installed micro-hydropower systems, and a kithul farmer⁴ in the buffer zone of the adjacent, previously threatened forest. He says that the climate has become more extreme throughout the last few years. The small tea plantations using chemical fertilizers had started to dry out and spoil during the dry season; the home gardens, cultivated with organic fertilizer, would have no problems, even in the dry season.

Mr. Peiris is one of the beneficiaries of the HEDO project. His life has drastically changed in the last few years, like that of the other villagers and of several neighbouring communities in the buffer zone. Not only has the project uplifted the peoples' lives and provided them with alternative and more sustainable incomes — while protecting the forest and working towards climate change mitigation and adaptation — it can serve as a lesson why community participation is crucial and how to achieve it.



Short- and long-term impacts

One important lesson can be drawn from the micro-hydropower project. As stated by Ravindranath (2007, 844): “especially from the developing country’s perspective [...] climate change mitigation strategies will have a long-term global impact on greenhouse damage, whereas adaptation policies generally have a positive direct immediate effect for the countries and regions that implement them.”

As a general outcome of Sri Lanka’s SGP projects, it was noted that tea growers who switched to organic practices discovered that during droughts — which have reportedly become more frequent due to climate change — they did not experience a drop in yield, while conventional tea farming areas did. This is both adaptation and mitigation. While adaptation shows the immediate effect (no drop in yield during drought), mitigation is a slower process, slowly conserving biodiversity and organic matter in the soil. If coupled with agroforestry (that is, by planting trees in home gardens) it also supports CO₂ sequestration, thus lowering GHG emissions globally.

The success of these techniques has led the UNDP in Sri Lanka to earmark organic farming in home gardens and tea plantations as one of four areas to broaden beyond SGP. Furthermore, the project promoted organic practices in forests bordering tea plantations to reduce the chemical run-off into watercourses that originate from forests.

HEDO’s approach to protecting and conserving the forest area was highly innovative. “They didn’t mention anything about protection,” says a kithul farmer who lives in the buffer

zone of the forest. He used to go regularly into the forest to cut timber and sell it on the market; this provided a good income. His fellow village members would also encroach upon the forest for small-scale tea cultivation. "HEDO told us: 'you can get profit from the forest,'" continues the farmer: "they provided us with electricity from the stream in the forest. Now we have light. Now we know about the real value of the forest."

The micro-hydropower provides more than lighting for the villagers' homes. Now most of them have mobile phones that let them stay in touch with other villagers and people in nearby towns. Many also have a television at home. Once a day the kithul farmer now gathers with his family in front of the TV for an hour or two to watch the news and other educational programs. When there was no TV, the family members would normally never come together. Electricity, as well as an improved market linkage, was what motivated the villagers to approve HEDO's project; the conservation of the forest was a byproduct to them. Only afterwards did they realize how valuable the forest really is.



The immediate effects are the ones that matter most to poor communities. Forest dwellers and those in the buffer zones form one of the poorest sections of society in developing countries and are likely to be adversely affected by climate change (Ravindranath 2007, 848).

HEDO's work as an example of SGP projects in Sri Lanka in particular, and of effective community participation in SFM in general, shows that it is imperative to stop deforestation in the buffer zones of forests. To make communities aware of forest protection — and thus ensure clear and protected boundaries by means of a physical and social fence — long-term goals need to be accompanied by immediate benefits. In this case, mitigation and adaptation strategies (hence long-term and short-term effects) are intrinsically and inseparably linked. Stopping or minimizing deforestation ensures no further emissions and more CO₂ sequestration. Agroforestry creates an effective carbon sink, ensuring CO₂ storage as well as effective and sustainable watershed management. This will help to store water even in droughts, making a contribution to both mitigation and adaptation.

The World Agroforestry Centre suggests that a billion ha of farmland could be turned into carbon-rich agricultural landscapes. This could potentially sequester 50 billion tonnes of CO₂, one third of the carbon reduction challenge. So-called "fertilizer trees" capture nitrogen from the air and transfer it to the soil; this reduces the need for commercial nitrogen fertilizer by 75 percent while doubling crop yields (Sireshi et al. 2008). A diverse tree cover can also increase agro-ecosystems' resilience to drought, pests and disease and to other threats to food production induced by climate change. Organic practices in agriculture (be it tea cultivation or home gardening), coupled with agroforestry, help conserve soil fertility through ensuring a high level of organic matter in the soil and also conserve biodiversity. Plants are hence more likely to survive harsh climatic variations and droughts.

The promotion of alternative energy such as micro-hydropower results in a psychological and physical outcome: it makes the villagers appreciate the forest at the same time as it

reduces fossil fuel consumption,⁵ an important mitigation strategy. While hydro-electric dams may pose a threat to freshwater ecosystems and result in a loss of biodiversity, micro-hydropower, because of its size, is unlikely to have detrimental effects on the environment.

Actions taken by communities in other SGP projects included the construction of fire belts, uprooting of mana grass (*Cymbopogon nardus*, native to most regions in Southeast Asia), planting of fire-resistant species, and the employment of committees to patrol the forest. These are all effective — and immediate — adaptation strategies that help prevent forest fires and ameliorate the worsening situation due to climate change.

It is crucial to not only consult local communities, but let them come up with their own solutions, after being informed about the situation they face now, are about to face, and will face later if no action is taken. In that way innovative strategies can be developed that are best adapted to their circumstances. For instance, in the forest area where HEDO has worked, no extra patrolling is required as farmers regularly climb the highest trees in the forest to tap the kithul palms for sap. While doing this they can oversee the forest, see potential intruders and spot dangers such as a forest fire.



Conclusion

It is imperative to have community participation in forest conservation. Better results can be achieved through effective policies that focus on wide stakeholder involvement and collaboration, and through actions and programs that seek the advice of local communities. SGP Sri Lanka is a highly effective program that proves this point. Self-help groups and bottom-up approaches ensure community participation, guarantee community ownership and give local people a sense of pride and usefulness. In order to do this, projects must include their valuable knowledge about climate changes and their implications. Close collaboration with local NGOs, which are in turn linked to larger institutions and local as well as central authorities, ensures the possibility of up-scaling and further policy guidance.

Key factors for success were efficient participation — which resulted from collaborating with a local NGO that understood the needs and structures of the local communities — and local awareness of the link between the benefits received through hydropower and organic agriculture and the need for responsible forest use. Another crucial point is that work in the forestry sector clearly promotes a synergy between climate change mitigation and adaptation. Most programs that address mitigation also have adaptation components, and vice versa, and therefore adaptation strategies should be incorporated into mitigation projects. Projects should include a combination of short- and long-term benefits for livelihoods and climate.

Last, although SGP PTF was set up to promote tropical forests in general, many activities fit very well into strategies for climate change adaptation and mitigation.

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Endnotes

1. While the FAO (2005) states a number as high as 30 percent of the total land area, or 1.9 million ha, this refers to the total forest cover, including areas with as little as 10 percent actual tree cover. Closed-canopy natural forest areas cover about 23.9 percent according to FAO (2005), or 25 percent according to De Zoysa (2001: 57); others estimate them to be about 15 percent to date.
2. Currently, a five-year plan for community-based adaptation to climate change is being developed by UNDP GEF/SGP Sri Lanka (in addition to the general SGP program), to make civil society organizations aware of climate change and how adaptation can take place, and to fund promising projects throughout the regions in the country that are likely to be the most adversely affected. Other actors, such as the Disaster Risk Management Centre, established under the National Council for Disaster Management and part of the Government of Sri Lanka, closely collaborating with UNDP, also increasingly seeks to embody community participation as a principal thrust of its programs.
3. Treacle is syrup; jaggery is a traditional unrefined type of sugar, concentrated from palm sap without separating out the molasses and crystals.
4. Kithul farmers tap the sap of the kithul palm (*Caryota urens*) to produce treacle and jaggery.
5. After 30 months of smooth running the results are impressive: 35 families are the beneficiaries of HEDO's micro-hydropower plants, which have generated 234,000 kW/h of power. While the allocated budget was just 700,000 LKR (around 6,500 US\$), the value of electricity generated is worth 2,059,500 LKR (18,000 US\$). The consumption of kerosene was reduced by 13,500 litres and the value in market price equals 1,080,000 LKR (9,500 US\$).

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- Further information is available on HEDO (www.hedosrilanka.org) and UNDP GEF/SGP Sri Lanka (www.sgp-srilanka.org).