

landscape management that encompasses

concepts, tools and methods for planning

environmental objectives. It is a process-ori-

and managing a landscape in order to

achieve multiple economic, social and

ented approach to management that

involves all stakeholders.

On the next few pages, we report on TBI's work in integrated landscape management projects in Colombia and Ghana. TBI also contributed to knowledge, capacities and policy change for a variety of landscape aspects in 2016. The stories featured on the next few pages bear witness to the richness of experiences that TBI researchers document and share with their stakeholders.



Facing climate change in Colombia

Páramos are endemic ecosystems in the northern part of the Andes, found only in the high mountains of Colombia, Costa Rica, Ecuador, Perú and Venezuela. They are strategic due to their floral and faunal diversity and because of the ecosystem services they provide, including carbon sequestration in the soil and water regulation that benefits almost 70% of the inhabitants of Colombia.

Páramos face many threats, including mining, huge infrastructure projects, expansion of agriculture, and global climate change. Climate change is characterized by an increase in the average temperature and a change in the precipitation regime; these shifts pose a hazard to water storage and its regulation in the páramos, and consequently to the lifestyle of the communities. These changes require adaptation measures as well as an acknowledgement that is impossible to avoid them.

Based on an understanding that conservation measures should be developed within a framework of land and environmental governance, the "Communities of the Páramos" project in Colombia promoted elements of adaptive processes. The goal of these processes was to strengthen the páramos as ecosystems and socio-ecological systems, and therefore to promote decision making — with the full participation of all stakeholders — that is based on their relation to the páramo.

In Colombia the project included a course on páramos and climate change. The stakeholders included groups of "campesino" women, representatives of associations, presidents of local territorial organizations, teachers in rural schools, officials of local governments, officials of the Water Company of Bogotá, university students linked to the region, and national park officials.

The course sought to acquire knowledge from each participant. Most of the sessions included a lecture, one or two workshops and a discussion, all related to the specific topic of the day. Examples of discussion topics included sustainable economic alternatives in páramos, experiences with conservation incentives and payments for environmental services, and environmental education in classrooms and in the field. During the discussions, people who could share their valuable practical experience in the context of adaptation to climate change were invited to participate.



The "Communities of the Paramos" project strengthened capacities and coordination for adaptation to the effects of climate change. It was coordinated by IUCN South America and developed in Peru, Ecuador and Colombia by a range of local organizations. TBI Colombia developed the project.

Throughout the sessions, participants developed a citizens' agenda that reflected their various voices and diverse perspectives. As a first step they defined some principles, such as shared responsibility in the care of the páramos, participation in policy and management of the páramos, recognition of traditional knowledge and the presence of local communities in the páramos, and reciprocity and solidarity in the conservation of the páramos.

The agenda includes developing collective positions on the need for conservation and effective use of the páramo and its resources, and makes a range of specific proposals to this end. It contains proposals regarding local participation in conservation; actions to improve health care in relation to the context of high mountains; education for appreciation, conservation and sustainable use of the páramos; research for sustainability, care and decision-making; governance of the páramos; production geared to the sustainability and protection of food systems; and financial mechanisms for the management of the páramos by local people. In addition, participants formulated some

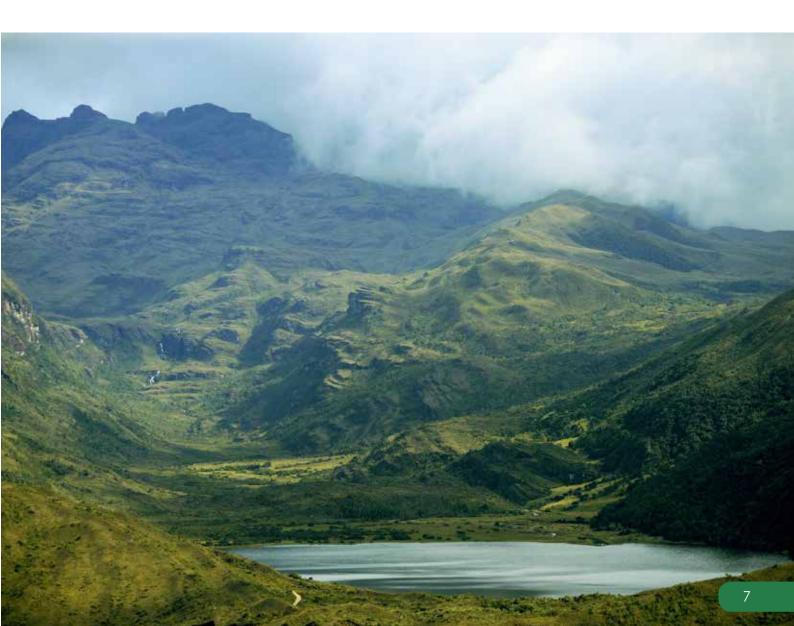
proposals, such as the need to develop monitoring of the páramos, conservation and sustainable use, and exploring the possibilities offered by "green" markets.

The agenda² was published (in Spanish) at a key moment, when municipal election campaigns were taking place. It was launched at various places and at various governmental levels. The objective was to position the páramo and adaptation to climate change in the agendas of the municipal and departmental administrations, and to suggest elements to include in their future development plans.





2 Autores varios (2015). Los páramos y su gente: Agenda ciudadana para un territorio posible. Propuesta para la acción desde habitantes de los páramos de Chingaza, Sumapaz, Guerrero, Cruz Verde y Cerros orientales. Proyecto Comunidades de los páramos, fortaleciendo las capacidades y la coordinación para la adaptación a los efectos del cambio climático. Bogotá: Tropenbos Internacional Colombia and UICN Sur.





Local communities and decision making in Ghana

In the past, forest fringe communities in Ghana were left out of important decision-making processes concerning the forest. This was due to a colonial legacy that allocated vast tracts of forests to the central government, which exerted exclusive rights over their control and use.

The main interest of colonial forest policies was the exploitation of timber for the overseas market, and did not involve local communities in the management of forests.

This was in spite of the fact that forest fringe communities had managed their forests sustainably before the advent of colonialism. They included cultural practices such as taboos that set aside days or even longer periods of time when activities in the forest were forbidden, and demarcating parts of the forests as sacred groves.

As a result of rapid forest degradation and deforestation — which are telltale signs of mismanagement of forest resources under the centralized system — Ghana has adopted a Participatory Forest Management Policy. The policy emphasizes the involvement of forest fringe communities in the planning, exploitation and conservation of forest resources.

Unfortunately, the shift away from the government-led system to community-based collaborative management, though commendable, has not yielded the desired results. This is because forest fringe communities often lack the necessary skills to effectively participate in decisions concerning the management, exploitation and conservation of their forests and the resources found there.

The "Strengthening Local Communities for Improved Participation in Decision Making Processes" project, known as the Atewa Project, is being implemented by TBI Ghana. Its goal is to train people living on the fringes of the Atewa Forest Range and its environs in effective forest management. It also builds their decision-making capacity, which will help them participate effectively in initiatives concerning the forest.

This is especially critical in the face of efforts being made by conservationist and environmentalists, spearheaded by A Rocha Ghana and the International Union for the Conservation of Nature (IUCN), to convert the Atewa Forest Reserve, located within the Atewa Forest Range, into a national park to protect the vast ecosystem services that the reserve provides.

The Atewa Forest Reserve has a high level of biodiversity. It is also the watershed for three important rivers in Ghana: the Ayensu, Birim and Densu. These rivers account for 70% of the water supply to the country's capital, Accra, and they provide water to 800 towns and villages in the Eastern Region of Ghana. The rivers are also an important source of water for domestic, agricultural and industrial activities in three of the country's ten regions, including the Greater Accra Region.

Due to its rich biodiversity, the area was designated as a forest reserve in 1926 and as one of Ghana's 30 Globally Significant Biodiversity Areas in 1999. It was declared an Important Bird Area by Birdlife International in 2001.

In spite of the vital ecosystem services that the reserve provides, efforts are continually being made to mine its rich mineral deposits, including gold and bauxite. Mining the Atewa forest would not only damage its rich biodiversity, but also compromise its vital ecosystem services, especially the supply of potable water.

As a first step to strengthen the role of local communities and relevant stakeholders in decision-making processes and management of the Atewa Forest Reserve, TBI Ghana carried out a stakeholder analysis in ten communities in the East Akyem and West Akyem districts, all of which were near or within the forest reserve. The analysis involved a literature review, reconnaissance survey, focus group discussions, and consultations with various stakeholders. These efforts were aimed at identifying stakeholders, assessing their needs, and developing training sessions based on these needs to strengthen skills in decision making and management.

Based on this analysis, the primary stakeholders of the Atewa Forest Reserve were identified as traditional authorities, chainsaw operators, the Forestry Commission, illegal gold miners, law enforcement agencies, community members and farmers. The stakeholder analysis also revealed perceived conflicts among the stakeholders and outlined strategies to address them.



In addition, a decision-making manual on the management of natural resources was developed to guide stakeholders. A matrix was also developed to enable stakeholders to assess the pros and cons of every decision.

As part of project implementation, a research study was undertaken. The research was carried out in the ten forest-dependent communities along the fringes of the Atewa Forest Reserve. They are located in five political districts of the Eastern Region of Ghana: East Akyem, West Akyem, Atewa, Ayensoano, and Denkyembuoso.

The study revealed that adopting the Community Resource Management Area (CREMA) approach to the management of the Atewa Forest Reserve would enhance benefits for all stakeholders and provide the best benefit-sharing arrangement for managing the reserve.

CREMA involves the incorporation of sustainable wildlife management within the livelihood activities of forest fringe communities, who also receive economic incentives through sustainable income-generating activities that are compatible with wildlife management. These incentives are developed according to the values, needs and perceptions of equity of the stakeholders involved. Lately, the concept has been broadened to include tree resources.

The study identified the possible barriers to effective benefit sharing. These barriers include land tenure issues, difficulties in determining the benefits that are due to individuals and groups in monetary terms, and the lack of a fair and suitable benefit distribution mechanism.

Other barriers include lack of transparency in sharing and accountability, and a failure to audit fiscal benefits, especially collective benefits, to ensure that they actually reach the appropriate beneficiaries and are used for the intended purposes. Another barrier is the lack of established institutions for resolving conflicts that arise from benefit sharing. Elite capture was also identified as a major threat to the success of benefit-sharing arrangements.

The study further revealed that existing benefit-sharing arrangements for forest fringe communities in Ghana do not address the question of "Just Access," despite the fact that these arrangements are a key determinant of their source of livelihoods and thus their standard of living.



Land-use planning, Upper Suriname River area

Suriname is one of the most densely forested countries in the world. It needs to have sound land-use planning in place in order to negotiate the trade-offs from developments such as new road infrastructure and to guarantee the survival of forest-dependent livelihoods.

In 2014 TBI Suriname began a Participatory Three-Dimensional Mapping (P3DM) project in the Upper Suriname River area. The initiative was developed within the framework of the project, "Multi-scale modeling of ecosystem services and land-use scenarios in the upper Suriname River basin," carried out by TBI Suriname, the Association of Saamaka Village Chiefs, WWF and the ACP-EU Technical Centre for Agricultural and Rural Cooperation.

In 2014, the P3DM project mapped 15 villages and their surrounding territory. The following year, with co-funding of the UNDP-GEF Small Grants Program, it mapped an additional area, including 10 more villages and their surrounding territory. Together these areas comprise 3,805 km². The mapping activity and the resulting map allowed the local communities to document their territory and record its importance to their livelihoods.

Workshops were conducted on area and scenario modelling. These workshops were held with the local people and other relevant stakeholders, such as the government, private enterprises, academics, NGOs and CSOs.

Detailed digital versions of the maps have been produced and made available to the wider public. This increases knowledge of the area and improves the understanding of how the Saamaka people rely on forest resources. It also provides a tool for better land-use planning. For example, the Saamaka people can use the map to clearly demonstrate that a newly built route is increasing access to the forest area that they depend on. The maps also revealed that logging concessions were being issued to some villages for community forests by the Foundation for Forest Management and Production Control. When the villages—together with logging companies — exploit the timber resources, this interferes with traditional use of the forest by local people.

The P3DM method has proved to be an effective tool for land-use planning and for including local people in the sustainable development of their territory.



Sacred sites and cultural cartography in the Colombian Amazon



In recent years various groups of indigenous people from the northwest Amazon have developed cartography exercises to document their knowledge of the land and sacred sites. These efforts have generated 30 local maps as well as written documents, videos and multi-media products about traditional toponymy, ancestral settlements and the local diversity of forest, fish and wild fauna.

TBI Colombia has supported this traditional cartography. The work was carried out by knowledge holders from the Matapi, Yucuna, Tanimuca, Muinane, Nonuya and Miraña ethnic groups, who live in the mid-Caquetá River area and the Miriti and Apaporis river areas. The information they generated has contributed to the development of public policies for the protection of sacred sites. It has also fed discussions between communities and indigenous organizations about cultural strengthening. In addition, indigenous organizations have used the information during negotiations with the national government on spatial planning and the protection of indigenous people and their territories in the face of infrastructure developments and mining activities.

The traditional knowledge of the territory held by the indigenous people from the Amazon is very detailed. Shamans carry out mental "journeys" up the Amazon River from its mouth to the places where their ancestors settled. These places were located at the headwaters of the Mirití River, a tributary of the Caquetá River located more than 3,000 kilometres upstream. On these mental journeys a series of important places related to the spiritual "owners" are located: they are considered

to be sacred sites that are key to the management and balanced use of forest resources.

The documents, videos, multi-media products and maps comprise information about the area's history, from the creation of the world until the present. This information relates to soil types, vegetation cover and the distribution of rivers and waterbodies. It includes traditional toponymy, with hundreds of traditional names; in contrast, official maps have almost no information about the area. The information produced also documents settlement history and the distribution of various ethnic groups, as well as the distribution of aquatic and terrestrial fauna that are such an important part of this indigenous world.

The results of the cartography exercise were shared during a large meeting of knowledge holders from five regions in Colombia. Organized by the Ministry of Culture, this event demonstrated the importance of local visions in the definition of traditional cartography, and how it can complement official cartography. It also showed how important it is to create opportunities for dialogue about technical and social cartography, and to generate information to support the planning, management and governance of indigenous territories.



Smallholder farmers are key players in Ghana

Evidence abounds that Ghana has suffered rapid deforestation over the years. The country has large tracts of degraded forests, a situation that has aggravated droughts and bushfires. The resulting loss of livelihoods has led to the impoverishment of forest-fringe communities.

To combat the rapid loss of the country's forests, successive governments have promoted tree plantation programmes. However, the government has tended to focus on large-scale commercial plantations to meet its ambitious target. The current National Plantation Development Programme has an annual target of 20,000 hectares over the next 25 years.

Taking a cue from agriculture in the country, where small-scale farmers account for the country's impressive high levels of cocoa production, it is conceivable that small-scale tree farmers, given the necessary support, could make a significant contribution to the national reforestation effort. Currently, though, such farmers do not receive the requisite support.

It is claimed that small-scale plantations have the ability to deliver on integrated landscape-level objectives of supporting livelihoods, promoting sustainable agriculture and enhancing ecosystem services. However, there is little empirical evidence for this. There is also a need to identify the barriers that prevent small-scale tree plantations from realizing these goals.

In an attempt to fill in this knowledge gap TBI Ghana has implemented the <u>Landscape</u> <u>Restoration Project</u> (LRP). TBI Ghana carries out field studies to generate relevant scientific information to support the country's plantation development programme. These studies are also aimed at assessing the contributions that small-scale plantation developers can make to the national reforestation effort.

Preliminary findings indicate that prior to 2002, individual smallholder tree growers and their associations planted a total of 35,000 ha of land. This compares to 5,200 ha planted by large-scale commercial plantation developers and 4,000 ha by the Food and Agriculture Organisation in conjunction with the Government of Ghana.

This smallholder planting was achieved in spite of several constraints. Smallholder tree growers are scattered throughout the country and operate in isolation. Their plantations have an average size of less than one hectare, and smallholders often lack the skills necessary to effectively manage their plantations as a business enterprise. Furthermore, smallholder tree farmers face financial and logistical constraints. Their lack of negotiation skills makes them vulnerable to exploitation by timber contractors, and poor coordination between tree grower associations and their service providers limits their ability to obtain timely and efficient service.

Other constraints that smallholder farmers encounter include the lack of a well-organized technical support mechanism such as a forest extension service, and an absence of mediumterm benefits from plantations, especially after canopy closure.

Under the LRP, more than 160 tree growers in 16 communities in Ghana have benefited from

capacity-building workshops related to these issues.

The project has also discovered other major issues that hamper the implementation and success of the country's National Plantation Development Programme. According to the Forest Services Division of the Forestry Commission, one major problem is the destruction of tree saplings through free-range grazing by cattle belonging to Fulani herdsmen. Not only do cattle trample and feed on

the saplings, but the herdsmen start forest fires in order to create conditions that are conducive to cattle ranching.

Other challenges facing the implementation of the programme are the use of inferior planting materials, the low capacity of field officers to apply best practices in commercial forest plantation development, and the non-availability of certified seeds.







High Conservation Values in Indonesia

Since the High Conservation Value (HCV) concept was introduced in 1990s, many HCV areas have been identified in forest concessions, oil palm plantations and other production areas. HCVs located within production areas make a significant contribution to protecting and maintaining the entire landscape. However, production areas are planned on a concession by concession basis. This implies a risk that at a larger landscape scale HCVs may not be linked in a coherent and efficient network.

Oil palm plantation owners and forest concessionaires are starting to realize the importance of HCV implementation. This is partly due to the requirements for complying with certification by the Roundtable on Sustainable Palm Oil, the Indonesian Sustainable Palm Oil system, and the Forest Stewardship Council, which set standards for sustainable management practices. Since the HCVs found in production areas may be affected by plantation management, the production companies are required to identify, manage and accommodate them in their planning and management operations.

Almost 500 management units — with around one million ha of land comprising natural forests, pulp plantations and oil palm plantations — have defined and managed their HCV areas. By implementing the HCV approach, the industry can reduce its negative impacts. And if sustainable practices can be imposed on the management units of the plantations, this could benefit all the stakeholders at the landscape level.

In recent years, TBI Indonesia has assisted more than 20 management units of oil palm plantations

and forest concessionaires to identify and assess HCV areas. In 2015, it supported three rubber plantations to carry out HCV identification and assessment. TBI Indonesia also helped a group of companies working in the oil palm sector develop best practices and management recommendations on preserving and maintaining their conservation areas.

This work will inform assessments of biophysics and biodiversity and provide information about the social, economic and cultural conditions of the communities near the production areas. It will also support recommendations for improving management in order to achieve better sustainability. Such recommendations will create more awareness of the importance of preserving HCV areas within production zones and of promoting collaborative management between companies and local indigenous communities. These people have lived in the area since long before the plantations were established.

In mid-2015 TBI Indonesia also carried out research at the Pawan River watershed to assess the potential of the HCV concept to provide the basis of landscape conservation planning. The Pawan watershed was chosen because it is representative of those areas in Indonesia that have experienced extensive changes in land cover, and because HCV activities have taken place there. The watershed provides an appropriate site to study the gap between potential and actual HCVs. This gap — and the high proportion of potential HCVs that are managed by the private sector — indicates a high risk of losing HCVs.

In the past 20 years most of the area has undergone vast changes, with a major shift from the natural lowland dipterocarp forest that originally dominated the area to fast-growing plantations. In addition, detrimental activities such as illegal, small-scale mining, illegal logging and encroachment have increased.

Despite these changes, which are carried out in the name of economic gain and people's prosperity, but are often destructive to the environment and nature conservation, some HCV areas remain. Many concession holders in the Pawan watershed have identified and manage HCV areas in their management units. Some of these concession holders recognize the importance of an HCV approach in supporting a sustainability of their production areas; others see the approach as merely a "green" campaign to achieve better acceptance of their products by the market.

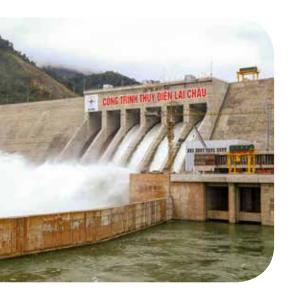
The HCV areas within management units of the production areas should be connected to each other to form conservation corridors and avoid being isolated. Unfortunately, in many cases, HCV areas are separated from each other, forming small islands in a sea of intensive production. This reduces their ability to contribute to land-scape-level conservation. Connecting these HCV areas within concession boundary areas can be achieved by requiring concessionaires to adopt landscape conservation planning as the basis for delineating natural corridors at the landscape level before they receive a permit for concession

areas. Ineffective land-use policy is partly the result of the failure to do this.

The research addressed the attitude of the private sector towards HCV initiatives, and studied HCV identification, methodology, intensity of implementation and management, as well as connectivity between HCV areas. The emphasis of the research was on the biophysical aspects of HCVs, rather than their social and cultural characteristics. Upcoming research will verify the quality of identification and management of HCVs and their contribution to natural resource management at the level of management units and landscapes. The key findings will serve as the basis of improvements to the HCV toolkit and to strategies to raise awareness of HCV initiatives and incorporate them in resource management.

TBI Indonesia also supports and promotes the HCV concept through the High Conservation Value Network Indonesia (HCVNI). During 2015, together with other parties in the network, TBI facilitated the development of new HCV guidelines. These guidelines will be reviewed and improved based on experiences with implementing the existing guidelines in Indonesia. Input and suggestions from HCV practitioners in the country will be collected and will be adjusted to reflect actual practice; this input will be in line with the principles of the global guidelines. Expert reviewers will provide feedback and ensure quality.





Hydropower and implications for reforestation in Viet Nam

The energy industry in Viet Nam has developed rapidly in the last twenty years: 98% of households now have electricity. The expansion of the energy sector, along with increased power generation, has greatly contributed to socio-economic development, particularly in rural and mountainous areas. However, the increase in the number of hydropower plants has had negative impacts on natural resources, biodiversity conservation and local livelihoods.

Land conversion for hydropower developments has not been effectively planned or monitored in Viet Nam. From 2006 to 2013, approximately 200 projects converted more than 20,000 ha of land to hydropower plants across the Viet Nam's 27 provinces. Although the forest protection and development law and other legal measures require compensation schemes to be in place for such conversions, in practice, these schemes are not being implemented.

In 2015, TBI Viet Nam worked with Hue University of Agriculture and Forestry to conduct the research project, "Hydropower plant development and rewarding plantations in Viet Nam." The project assessed the policy-making process for compensation schemes involving tree planting and implementation at the local level. It also sought insight on how forest governance takes place at the provincial and community level.

The initial results indicate that provincial authorities have not taken an active role in planning for hydropower plants or in incorporating forest protection into the design of hydropower projects. In addition, delays in policy-making processes, combined with insufficient involvement of the

relevant stakeholders, have created big challenges for the implementation and monitoring of policies.

Consequently, the pace of reforestation is slow throughout the country. In Kontum Province in the Central Highlands, for example, only 992 of 3,020 ha of trees were planted, just 33% of the target for 2015. The main reason for this slow progress is that investors in hydropower projects do not provide sufficient funds for tree planting in their budgets; the problem is worsened by a land shortage. The research project's field surveys also showed that large areas of land are owned or encroached on by local people. Therefore, land conflicts occur when dams are built. Furthermore, regulations on prices for tree planting, and the specific steps required to pay compensation, differ between provinces.

Hydropower plants in Viet Nam in general, and in the Central Highlands in particular, not only destroy the forest but also have negative impacts on the socio-economic and cultural life of the communities, especially upland ethnic minority



groups. These people have to leave their homes and arable land to make way for hydropower plant developments. To some extent, the economic damage can be compensated, but there is no way to make up for social and spiritual losses.

Moreover, hydropower plants are responsible for much of the damage to downstream areas in Viet Nam. The hydropower plants capture water during the dry season and release it in the rainy season, which denies local people and crops the resources they need at the proper times.

By the end of the research project the participants expect to have information for policy makers and managers regarding the positive and negative impacts of hydropower plant developments. This information will be shared through policy briefs and multi-stakeholder dialogues.



Workshop on hydropower plant development in Viet Nam

Date: 25 December 2015 Place: Hue, Viet Nam

By: TBI Viet Nam and Hue University of Agriculture and Forestry

In Viet Nam, hydropower companies are required to compensate local communities for forest land lost due to hydropower development. Workshop participants concluded, however, that the pace of reforestation is too slow to meet official requirements. Participants also indicated that hydropower enterprises don't fulfil their financial obligations to forest protection and development.

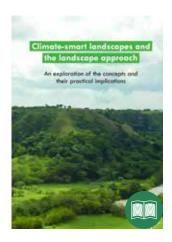
Workshop participants made several recommendations for tackling these difficulties. These include promoting closer cooperation among government agencies at all levels and formulating clear long-term policies for forest compensation funds and programmes. If provincial funds for forest protection and management are assigned to the implementation of forest plantations, this money

must be distributed in a way that supports effective daily operations. The amount to be contributed to reforestation by the hydropower enterprises — VND 15 million, or US\$ 670 — should be increased to VND 65 million, especially if reforestation must be carried out in mountainous areas.

The ideas contributed by the workshop participants provide valuable inputs for TBI Viet Nam's research group as they review and complete their field data. This work will in turn provide the foundation for future policy recommendations.







Climate-smart landscapes and the landscape approach

Global challenges related to poverty, food security, environmental degradation and climate change converge in the rural areas of the tropics. Here, competition for land

and resources is strong, poverty and environmental degradation are persistent, and climate change threatens people's livelihoods.

In recent years, there has been growing recognition that these challenges need to be addressed in an integrated manner and at a landscape level. The "landscape approach" and "climate-smart landscapes" are powerful concepts that are quickly being adopted by organizations working at the interface of agriculture, forestry and biodiversity conservation.

TBI's report, Climate-smart Landscapes and the Landscape Approach: An exploration of the concepts and their practical implications, draws on scientific literature related to climate-smart landscapes and landscape approaches and on interviews with experts. The report proposes the concept of the climate-smart landscape as one

that simultaneously supports objectives related to climate, development and conservation, and it outlines the ways in which multiple objectives can be achieved through landscape management. It also examines the challenges of implementing integrated landscape management, with particular reference to innovative landscape governance arrangements. Finally, it reflects on approaches that help assess the effectiveness of integrated landscape initiatives.

The report underscores the need for systematic methods to understand and assess the implementation of initiatives related to landscapes and integrated landscapes. These methods will increase accountability to those who finance landscape projects and will better support positive development outcomes. Such methods can also be used as tools to generate discussion and negotiate trade-offs, which are an integral part of landscape-level initiatives.

Kusters, K. 2015. Climate-smart Landscapes and the Landscape Approach: An exploration of the concepts and their practical implications. Wageningen, the Netherlands: Tropenbos International.

Publications

Archambault, N., D. Morales, M.C. van der H	ammen y D.C. Pala	acio. 2015. <i>E</i>	Desafíos de	la gober-
nanza en los páramos para la adaptaciór	al cambio climátic	co. Bogotá, C	Colombia: T	ropenbos
Internacional Colombia y UICN Sur.				

Autores varios (2015). Los páramos y su gente: Agenda ciudadana para un territorio posible. Propuesta para la acción desde habitantes de los páramos de Chingaza, Sumapaz, Guerrero, Cruz Verde y Cerros orientales. Bogotá, Colombia: Tropenbos Internacional Colombia y UICN Sur.

Frieri, S. (ed.) 2015. Experiencias de educación acorde al contexto: conociendo el páramo desde las escuelas. Bogotá, Colombia: Tropenbos Internacional Colombia y UICN Sur.

Ha Van Tiep. 2015. Forest Fragmentation in Viet Nam: Effects on Tree Diversity, Populations and Genetics. Utrecht, the Netherlands: Utrecht University.

Nguyen Quynh Thu and M. Wit. 2015. Rapid rubber expansion in Viet Nam and its impacts on forest-land. Infobrief, March 2015. Hue City, Viet Nam: Tropenbos International Viet Nam.

Oduro, K.A., G.M.J. Mohren, M. Peña-Claros, B. Kyereh and B. Arts. 2015. "Tracing forest resource development in Ghana through forest transition pathways." *Land Use Policy* 48: 63–72. doi:10.1016/j.landusepol.2015.05.020.

- Purwanto, E. 2015. Building community-based forest management in protected areas. Infosheet No. 6. Bogor, Indonesia: Tropenbos International Indonesia.
- Purwanto, E. 2015. Empowering Sumatra's rainforest heritage management. Infosheet No. 3. Bogor, Indonesia: Tropenbos International Indonesia.
- Purwanto, E. 2015. Managing Sumatra's rainforest heritage through integrated landscapes. Infosheet No. 1. Bogor, Indonesia: Tropenbos International Indonesia.
- Purwanto E. 2015. Resolving land conflicts in conservation areas. Infosheet No. 7. Bogor, Indonesia: Tropenbos International Indonesia.
- Ramirez-Gomez, S.O.I., C.A. Torres-Vitolas, K. Schreckenberg, M. Honzák, G.S. Cruz-Garciag, S. Willcock, E. Palacios, E. Pérez-Miñana, P.A. Verweij and G.M. Poppy. 2015. "Analysis of ecosystem services provision in the Colombian Amazon using participatory research and mapping techniques." Ecosystem Services 13: 93–107. doi:10.1016/j.ecoser.2014.12.009.
- Tran Huu Nghi and To Xuan Phuc. 2015. Forest Land Policy Reform and Its Impacts on Local Communities in Viet Nam. Ha Noi, Viet Nam: Ha Noi National University of Education.

