Building a biodiversity-based sector

A biodiversity-based sector of the economy is defined here as consisting of businesses and other economic activities[2] that either depend on biodiversity for their core business or that contribute to biodiversity conservation through their activities. This particular solution focuses on how communities and entrepreneurs can support biodiversity conservation, alleviate poverty and reduce pressures to deforest while contributing to sustainable development of the local economy.

Many biodiversity-based enterprises are run by communities, which are able to access raw materials or products from community-managed lands. Typical products include ecosystem goods such as non-timber forest products (NTFP) and agro-forestry products. In Borneo this includes forest honey, gaharu, aloe vera products, 'banuaka beads', medicinal plants, fisheries (ornamental fish and fish for consumption), cocoa and adan rice. Three of these community-managed products—gaharu inoculation and cultivation, certification of cocoa agro-forest producers and the Tagal system & cage aquaculture for empurau fish—are described in the tables that follow, along with one service—community-based ecotourism. In the case of the latter, particular emphasis is placed on the potential for trans-boundary ecotourism, an integrated strategy for which would enhance biodiversity and local livelihoods while helping to sustain local Dayak culture.

Also presented in the tables below is a related category of enterprises referred to here as 'future biodiversity-based businesses'. Those presented here are: ecosystem restoration services, protecting and restoring abandoned logging concessions, bio-banking and bioprospecting. While some of these businesses have already begun to emerge in the HoB, in order for them truly to flourish, existing barriers, such as lack of entrepreneurial capacity, perverse incentives currently in place for unsustainable businesses, lack of recognition of tenure rights of indigenous peoples, conflicting regulations, etc. need to be overcome.

© Sugeng / WWF-Indonesia

Biodiversity-based products from community-managed areas

Community gaharu inoculation and cultivation[3]	
Description	Gaharu, also known as agarwood, aloeswood or eaglewood, is wood from the *Aquilaria* tree that is infected by a fungus, giving it a slight scent. This wood can be sold as a product of high commercial value for its use in religious, medicinal and aromatic preparations. Community gaharu agroforestry is the small-scale and environmentally sustainable production of agarwood by local communities.
What is the issue?	The gaharu industry is a viable and high-income industry with strong demand from the Middle East and more recently, China. High demand has led to unsustainable harvesting practices to the point of extinction of the species. Gaharu is only found in a small percentage of Aquilaria trees from the species known to produce it. Due to the difficulties in identifying which is a gaharu producing tree, trees are often felled and split open indiscriminately. Community gaharu agroforestry initiatives can lead to more sustainable exploitation of gaharu-producing trees.
Who is the seller?	Community groups (farmers' gaharu cultivators' association) with clear responsibility to conserve and sustainably manage a dedicated forested area.
Who is the buyer?	Capacity to process gaharu into essential oil (equipment and financial capital) could be built within the community groups, as long as there isa reliable power source for distilling. The trade chain could be made much shorter for more benefits retained at the source.
Steps towards successful business model:	• Development of technologies and methods for the selection of species according to soil and weather conditions, potential for resinproduction (i.e. fungus infected wood fiber) and environmentally sustainability; • Identify suitable growing areas; • Build capacity of local people in terms of business skills and production skills; • Improve access to (affordable) technology; • Multi-stakeholder planning process involving research institutions, government agencies and communities for sustainable gaharu production methods and practices; • Develop product marketing strategies which encourage the uptake of sustainably produced gaharu e.g. through systems such as green product labeling.
What can banks do:	Banks and other financial institution (e.g. credit unions, cooperatives) can offer microfinance, with simplified lending requirements for such entrepreneurial communities
What can the private sector do?	• Support and promote the purchase of sustainably-produced gaharu; • Promote/support local development of gaharu oil refining industry.
What can the Government do?	National: • Ensure land tenure and property rights are addressed; • Enforce CITES permits for production, import and export of gaharu products allowing for sustainably sourced/produced gaharu embedded within the approval process. Local: • Build capacity of the local community in gaharu production methods; • Establish local institutions to support business knowledge of local communities; • Develop agricultural land use plans at the local level, including identification of areas suitable for community-based gaharu agroforestry; • Provide subsidies and financial assistance for seedlings and inoculation.
Contribution to...	• Securing natural capital: Intensification of existing land use, e.g., old rubber plantations, fruit orchards to generate additional income while avoiding expansion of agricultural lands. • Poverty reduction: Community gaharu agroforestry can be used for income generation. • Economic growth: Builds local economies and helps diversify from timber and oil palm. • Climate change mitigation / adaptation: Increases biomass for the uptake of carbon and contributes to prevention of deforestation; enhances biodiversity, which builds ecosystem resilience in a changing climate.

Certification of cocoa agro-forest producers[4]	
Description	A certification system for sustainable and biodiversity-friendly cocoa production can provide economic opportunities while contributing to biodiversity conservation and stabilization of deforestation frontiers. Certification takes place at the firm level; certification criteria consist of management practices which are partly landscape dependent.
What is the issue?	Cocoa production has contributed to deforestation and biodiversity loss in many tropical countries. By using more sustainable farming practices such as an agro-forest system, cocoa can instead play a positive role in protecting biodiversity and ecosystems. Though cocoa agro-forests cannot match the biodiversity level of primary forests, biodiversity in cocoa agro-forests is higher than in most other agricultural landscapes. Cocoa can be used to partially reforest degraded agricultural lands, improve habitat connectivity for wildlife and stabilize and provide livelihoods to communities living within buffer zones around protected areas.
Who is the seller?	Cocoa farmers, cooperatives, companies
Who is the buyer?	Companies, middlemen
Steps towards successful business model:	• Identification of 'intact cocoa landscape' (proposed by organization or coalition of farmers); • For each landscape, site-level certification criteria are determined by a committee of local stakeholders with the advice of a global steering committee; • In each landscape, farmers produce cocoa according to the criteria; • Audit by trained local organizations, overseen by international steering committee; • Successfully audited farms can sell produce as certified 'biodiversity-friendly cocoa'.
What can banks do:	• Simplify lending requirements for sustainable entrepreneurs/farmers or offer microfinance; • Investors can favor certified companies/farmers.
What can the private sector do?	• Engage in long term sub-contracting arrangements with certified farmers/companies; • Adopt green procurement practices to buy certified cocoa only.
What can the Government do?	National: • Ensure land tenure and property rights are addressed; • Ensure capacity and authority of institutions for sustainable land management; • Ensure protected area management does not conflict with restoration initiatives; • Ensure agricultural and macroeconomic policies encourage biodiversity-friendly farming; • Ensure agricultural R&D and extension services have capacity to promote. Local: • Favour (certified) agro-forestry initiatives for ecosystem restoration when providing concessions.
Contribution to...	• Securing natural capital: Local and sustainable agro-forestry practices ensure ecosystems and biodiversity are sustained. • Poverty reduction: Enhances income, provides higher profit margin than uncertified cocoa. • Economic growth: Strengthens and diversifies local economy; greater proportion of the economic benefit is retained in the local communities[5]. • Climate change: Contributes to climate change mitigation by providing an alternative income source (rather than livelihoods based on deforestation and/or forest degradation); enhances/ maintains biodiversity which builds resilience against the impacts of climate change.

Tagal system & cage aquaculture for empurau fish[6]	
What is the issue?	Large scale commercial and intensified aquaculture causes organic sedimentation built up, reduced level of dissolved oxygen content, changes in biodiversity and an overall unhealthy ecosystem of the waters due to its high-input, high-output nutrient to the environment. However, aquaculture is being relied on to provide the increasing demand for fish supply, including the supply for empurau. Best aquaculture practices are needed to ensure long term sustainability of river fishes for aquaculture and alternatives income for local communities.
Who is the seller?	Businesses/Community
Who is the buyer?	Businesses
Steps towards successful business model:	• Comprehensive environmental impact assessment; • Identify suitable locations for development of empurau Tagal system; • Monitor the carrying capacity of river systems used for aquaculture and establish project approval and licensing systems which integrate an assessment of the carrying capacity; • Invest in research and development of sustainable freshwater aquaculture systems which build on enrichment of the natural surroundings to create pristine water conditions; • Invest in capacity building and support empowerment of local people and the Tagal system; • Design a system that distributes economic returns fairly among stakeholders and where returns are also invested back into management and enrichment of freshwater resources; • Introduce financing mechanisms enabling a percentage of profits to be channeled back to improvement of water quality and habitat restoration in the river basins; • Design a system that distributes economic returns fairly among stakeholders within the affected river system.
What can banks do:	• Banks and other financial institution (e.g. credit unions, cooperatives) can offer microfinance, provide the impetus for a greater integrated plan that includes an assessment of environmental and social risks.
What can the private sector do?	• Use and develop local community capacities in the industry; • Support the tagal system by working closely with the local communities.
What can the Government do?	Local: • Establish aquaculture standards including best management practices for the industry; • Build local capacity for establishment of tagal systems in targeted pristine river systems; • Create a framework or structure for multi-stakeholder and integrated water resources and land-use planning and management; • Invest in technology development, database development and establish ecological monitoring systems; • Promote tagal system areas for ecotourism.
Contribution to...	• Securing natural capital: The pristine river water required to be maintained for the survival of the empurau fish will promote conservation of the river system and its surrounding areas. • Poverty reduction: Empurau aquaculture and tagal system generates income for local communities. • Economic growth: Builds local economies and increased value from pristine freshwater resources. • Climate change: Reduce destruction of mangrove and ecosystems by reducing reliance on coastal aquaculture industry.

Community-based ecotourism	
What is the issue?	Community-based ecotourism can develop into a sustainable conservation-based enterprise, but in order to deliver on its promise, conditions must be created under which communities can exercise control over the kind and intensity of tourism, retain autonomy, and develop tourism in accordance with their own vision of the future and the needs of environmental conservation. Local people should be in a position to benefit from revenues of ecotourism, and to control ecotourism development to minimize negative impacts on their territory, culture, and society. In the HoB, cultural, nature and adventure tourism have a great deal of potential. Moreover, HoB offers the unique 'feature' of transboundary ecotourism between Malaysia and Indonesia, which BIMP-EAGA has already identified. Viable examples of private-community partnerships have been developed in pilot project areas (Kapuas Hulu in Kalimantan Barat and in the Krayan Highlands, Nunukan, Kalimantan Timur).
Who is the seller?	Businesses / communities
Who is the buyer?	Tourists / tour operators
Steps towards successful business model:	• Comprehensive environmental and social impact analysis; • International cooperation in terms of flights, roads, border-crossing, three-country travel pass, tourism infrastructure development and other supporting factors; • Multi-stakeholder planning process (local government, communities, operators); • Design a system that distributes economic returns fairly among all stakeholders; • Create economic benefits from conservation for local stakeholders; • Strengthen local community organizations and local business operators; • Invest in capacity building, support cultural revival and empowerment of local people; • Establish community ecotourism concessions with long-term management licenses.
What can banks do:	Banks and other financial institution (e.g. credit unions, cooperatives) can offer microfinance, provided the initiative is part of a greater integrated plan that includes an assessment of environmental and social risks
What can the private sector do?	Tour operators: • Engage in long term contracts with communities to stabilize income, while respecting the carrying capacity of the host communities and their environment; • Encourage tourists to contribute directly to the communities, rather than only financially through the operator; • Establish a fund for donations to the local community which can be used for addressing environmental stress that may occur from the increase in tourist arrivals; • Engage in promotional activities; • Aid government officials and community members to improve service while maintaining environmental quality. Other businesses: • Sell mainly local products; • 'Imported' products which are difficult to dispose of locally (e.g. batteries, medicine, etc.) can be taken back by tourists or operators on their way out of the HoB and properly disposed of in the city.
What can the Government do? '	National: • Draft legislation that recognizes the human and legal rights of indigenous communities in the HoB, including land rights; • Set-up immigration points at key locations to enable transboundary ecotourism; • Promote (green) entrepreneurship, e.g. through budget allocations for SME development in forested areas; • Draft special guidelines for tourism development in forested areas; • Draft regulations to simplify tourist visits to concessioned forest areas (e.g. timber concession) and conservation areas (e.g. standard price on entry permit, guide from forest ranger, etc); • Negotiate lower airfares/ initially subsidize airfares for remote HoB areas, to stimulate ecotourism development; • Build capacity of government officials in charge of destinations such as national parks. Local: • Recognize and respect intellectual property rights and adat (customary law/rights) claims of local peoples; • Design fast track administration to settle land tenure issues favouring productive communities who manage their forests sustainably; • Invest in opening and improving small airstrips in the interior as main access to the HoB area, and improve basic infrastructure in village areas (bridges and roads, water and electricty supply, internet and telephone access); • Use budget/facilities of Ministry of Tourism for providing skill training for tourism development; • Facilitate fair partnerships between community organizations and 'willing' private sector; • In order to spread the gains from tourism equitably, and avoid conflict regarding the distribution of income, the local government can act as an intermediary: A fee or levy is charged on tourists for use of environmental services. The resulting income could be used to establish a PES scheme that can compensate members of the community who are not involved with the tourism business; • Require non-community based enterprises to get Free Prior Informed Consent (FPIC) from community concerned.
Contribution to...	• Securing natural capital: Ecotourism depends on aesthetic natural beauty. To be able to sell this product, natural ecosystems and biodiversity needs to be secured. With this, other essential ecosystem services are maintained benefiting downstream industries and society. • Poverty reduction: Well-planned ecotourism which involves local people in ecotourism activities can secure additional income. • Economic growth: Builds local economies and helps them diversify away from the energy and commodity sectors. • Climate change: This sector can reduce pressure to deforestation. By keeping the forests standing, ecotourism secures a natural buffer against climate change and supports climate mitigation.

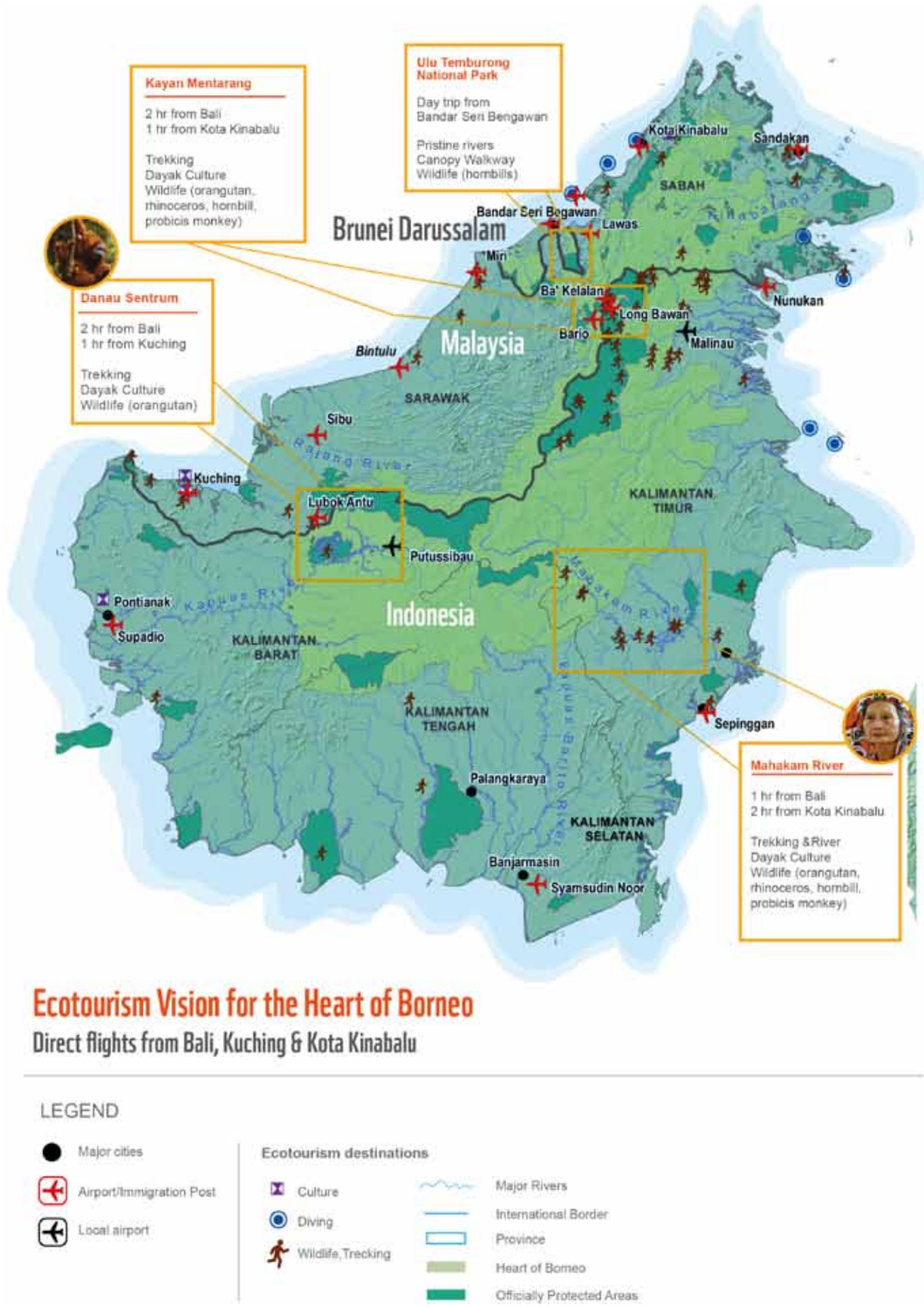

Figure 5.2: Vision for a transboundary HoB ecotourism destination

Box 5.1: What is needed to raise the HoB's tourism profile?

- Declare transboundary ecotourism in HoB as "ultimate" destination and experience and highlight the value of community-based ecotourism as appropriate scheme for the HoB area;
- Open official immigration posts (tourism) in Long Bawan (Kalimantan Timur) and Ba' Kelalan (Sarawak), and Lubok Antu (Sarawak and West Kalimantan);
- Develop an integrated (Brunei, Malaysia, Indonesia) promotional and marketing strategy for HoB Ecotourism;
- Optimization of air transportation for ecotourism: improvement of key airstrips in the interior; explore possibility of opening selected cross-border air routes in HoB (for example: Miri-Bario-Long Bawan-Nunukan; Miri-Lawas-Long Bawan-Nunukan; Kuching-Putissibau);
- Incentives to district governments to subsidize regular flights to the main ecotourism destination areas in the interior (Krayan, HuluBahau/ Pujungan, Putissibau, etc.;
- Support, adopt and promote local packages developed by local communities and organizations, together with tour operator;
- Put in place standards, community benefit-sharing, community-private partnerships, and capacity building.

© Alain Compost / WWF-Canon

Ecosystem restoration services	
What is the issue?	Degraded ecosystems cannot provide their many ecosystem services properly anymore, causing risks not only for those who live on the land concerned, but throughout the watershed. Many forests in the HoB are under threat of degradation.
Who is the seller?	Communities or companies, or a combination of the two, whereby a company sub-contracts implementation and monitoring to communities.
Who is the buyer?	Land owner, concession holder, government
Steps towards successful business model:	• Acquire technical knowledge for ecosystem restoration; • Build good relationships with local communities and involve them in planning process; • Implement plan.
What can banks do: What can the private sector do?	Engage in public-private partnership with government to engage in biobanking (See biobanking below) for conservation and ecosystem restoration. • Use and develop local community capacities in the industry; • Support the tagal system by working closely with the local communities; • Businesses can explore market and exploit the opportunity; • Businesses can approach local communities who manage their forest sustainably to jointly develop a restoration plan and subcontract their services in its implementation; • Communities can form a business that provides ecosystem restoration services professionally.
What can the Government do?	National: • Create a budget line for PES or ecosystem restoration and allocate budget; • Make restoration mandatory for certain economic activities; • Incentivize companies to restore degraded land by releasing restoration-concession holders from land tax while restoration is in progress; • Incentivize companies to apply for restoration concessions by granting them priority to participate in the REDD+ scheme, once the mechanism is in place. Local: • Create a market by purchasing restoration services; • Countries whose national development plans envision a knowledge-based economy, can use related allocations to fund advanced technical training and knowledge transfer for ecosystem restoration; • Exempt concession holders from yearly permits (self approval of activities); • Make restoration-concession eligible to obtain dedicated public funds.
Contribution to...	• Securing natural capital: Restores the ecological functions of ecosystems and biodiversity; more intact natural stocks (forest, soil, water, biodiversity) increase the flow of ecosystem services; investing in timely ecosystem restoration prevents severe degradation in the future. • Poverty reduction: Income can be earned, additionally or as a main profession, by community groups implementing and monitoring restoration plans; more intact natural stocks increase flow of potential revenue streams from ecosystem goods (forest products, fish, tourism) for local communities. • Economic growth: By creating a market for these services, income can be gained from them, adding to economic activity. • Climate change mitigation / adaptation: Restoring forest ecosystems will create a buffer against the impacts of climate change, as carbon sink function increases.

Protecting and restoring abandoned logging concessions	
What is the issue?	Inactive logging concessions represent land already committed to economic exploitation where, for various reasons, logging has been abandoned. Concessions that are inactive can be subject to illegal logging and encroachment due to access provided by roads that are constructed by companies to reach their concession. The loss of value from degradation may then result in these lands becoming idle and even being abandoned completely. Lack of proper management and restricting access by local communities who traditionally maintain the forest can result in degradation to the point where the forest cannot recover and the area becomes a wasteland.
Steps towards successful business model:	• Proactive spatial planning which identifies inactive concessions and addresses possible degradation; • Hold concession holders responsible for maintaining forest on concession lands; • Hold local governments responsible for minimizing inactive concessions, by providing incentives to reduce their number.
What can the Government do?	National: • Develop a regulatory framework under which concession rights are removed if concessions are inactive for more than a certain time span, provided that no proper forest management is arranged on the land in question; • Provide incentives for local governments to take responsibility for inactive concessions by providing competitive compensation for forest restoration/ management. Local: • Penalize companies who do not manage the forests on their inactive concessions in a sustainable manner; • Incentivize sustainable management of inactive concessions by concession holders, e.g. by extending exploitation permit.
Contribution to...	• Securing natural capital: Restores the ecological functions of ecosystems and biodiversity; more intact natural stocks (forest, soil, water, biodiversity) increase the flow of ecosystem services; investing in timely ecosystem restoration prevents severe degradation in the future. • Poverty reduction: Income can be earned, additionally or as a main profession, by community groups implementing and monitoring restoration plans; more intact natural stocks increase flow of potential revenue streams from ecosystem goods (forest products, fish, tourism) for local communities. • Economic growth: By creating a market for these services, income can be gained from them, adding to economic activity. • Climate change mitigation / adaptation: Restoring forest ecosystems will create a buffer against the impacts of climate change, as carbon sink function increases.

Biobanking	
What is the issue?	Significant finance is required to protect biodiversity and restore degraded ecosystems; a lack of financial incentive to conserve land makes it difficult to compete with other land uses that generate a financial return. Biobanking confers value to the land that allows it to compete with alternative land uses. The example of Malua BioBank has shown that there is a willingness to pay for biodiversity conservation services in the HoB (see box).
Who is the seller?	The owner of the land (private or government) or the company/government/ individual who has biodiversity rights over the area
Who is the buyer?	Private individuals /companies /organizations
Steps towards successful business model:	• Identify and characterize target market, i.e. a geographic area or industry in which there are market constraints on conservation that could be diverted to dedicated management areas; • Establish a long-term legal agreement to conserve the area and commercialize the rights to the environmental attributes; • Raise capital to invest in conservation works; • Estimate costs of land conservation and calculate/position the price of the product; • Establish conservation management plan and conduct protection or enhancement activities; • Quantify environmental attributes and, if applicable, submit for third-party approval certification; • Market environmental credits according to sales strategy; • Establish a perpetual charitable trust from funds generated from sales to fund ongoing management of the area or to endow long-term conservation management organization.
What can banks do:	• Generate and sell credits representing the rights to the conservation or enhancement of environmental attributes
What can the private sector do?	• Buy credits to improve environmental footprint of direct operations and across supply chains; • Buy credits to offset quantified reliably and independently verified environmental impacts; • Invest in biobanks.
What can the Government do?	• Businesses can explore market and exploit the opportunity; • Businesses can approach local communities who manage their forest sustainably to jointly develop a restoration plan and subcontract their services in its implementation; • Communities can form a business that provides ecosystem restoration services professionally. National: Integrate biobanking into national conservation strategy. Establish a market-based system for biodiversity offsets based on a legal requirement to compensate for environmental impacts from development. Local: Enable non-traditional organizations, such as financial institutions, to hold and manage 'conservation concessions'
Contribution to...	• Securing natural capital: Highly replicable and scalable model designed to raise capital to protect and restore the most valuable and threatened natural capital over the long term. • Poverty reduction: Biobanks are a potential source of financing for community forest management whereby biobank managers enter into a joint venture with impoverished and/ or disadvantaged landowners ensuring that revenues are shared and/or landowners are paid to protect and manage their land for its environmental attributes. The funding channeled towards conservation provides income and livelihoods for members of the community doing restoration work, patrolling, management, etc. • Economic growth: Biobanks work by assigning a commercial value to the restoration or protection of environmental attributes and attracting private capital to fund these outcomes. A new biobanking industry would add to GDP while ensuring that conservation of environmental attributes becomes fully integrated into sustainable development. • Climate change mitigation / adaptation: Carbon stocks are just one of a range of environmental attributes that biobanks could protect and enhance, thereby contributing directly to climate change mitigation. Bio banks focusing on biodiversity protection will also assist with climate change adaptation.

Box 5.2: Mitigation banking and biodiversity offset payments, Sabah, Malaysia.

The Sabah State Government licensed conservation rights for a period of 50 years to the Malua BioBank and a private investor has committed up to US$10 million for the rehabilitation of the Malua Forest Reserve over the next six years. In this initiative, the Malua BioBank sells Biodiversity Conservation Certificates (BCCs), for US$10, each representing 100 m² of rainforest restoration and protection.

Revenues from BCCs are used to recover costs incurred and to endow a trust fund ('Malua Trust') set up to manage the long-term conservation management of the Malua Forest Reserve over the remaining 44-year period of the license. Assuming all BCCs will be sold for the 34,000 ha area, the project has the potential to earn US$34 million.

At this point, there is no formal legal mechanism to allow third-party mitigation as a mitigation option for requirements in Sabah. The demand is driven by voluntary interest; however, there are ongoing efforts for Sabah to implement a 'No-Net-Loss Legislation'[7].

© Sugeng / WWF-Indonesia

Bioprospecting	
What is the issue?	Due to its diversity, the HoB provides good bioprospecting opportunities. Genetic resources and agro-biodiversity in large parts of the HoB have been used, cultivated, managed and modified by local people for centuries. This rich tradition (codified in language, plant names, local pharmacopeia and recipes, etc) has made it possible to identify and recognize potential uses of plants and other organisms for food, medicinal and other purposes. The holders and custodians of this traditional knowledge should be enabled to share in the financial gains made from these genetic recourses. Rather than seeing bioprospecting solely as an opportunity for financial gain, the source country may want to negotiate a form of cooperation which builds institutional and human resource capacity for research and development.
Who is the seller?	Currently governments of countries engage in bioprospecting agreements as 'sellers'
Who is the buyer?	Pharmaceutical companies engage in bioprospecting agreements as 'buyers'
Steps towards successful business model:	• Establish database of species found in the HoB and related traditional knowledge; • Establish procedure to secure intellectual property (IP) rights; • Establish a mechanism for benefit sharing with local communities; • Raise community awareness concerning their IP rights; • Provide a one-stop shop for prospective bioprospecting customers. • Generate and sell credits representing the rights to the conservation or enhancement of environmental attributes
What can investors do	Exploit investment opportunities
What can the private sector do?	• Start joint ventures with local communities, to enable local retention of financial gains and knowledge and capacity building.
What can the Government do?	National: • Develop action plan for implementing Nagoya protocol for equitable benefit sharing under CBD; • Resolve issues regarding the rights of indigenous communities in the HoB, including Intellectual Property rights; • Devolve authority to enter into bioprospecting agreements to province/district governments, to facilitate local benefit sharing; • Countries whose national development plans envision a knowledge-based economy can use related budgetary allocations to fund advanced technical training and knowledge transfer in biochemical sciences. Local: • Establish biodiversity center as knowledge hub, one-stopshop for bioprospecting "customers", provide related space, equipment and laboratory services for sample analysis.
Contribution to...	• Securing natural capital: By attaching value to biodiversity in this way, natural capital will gain appreciation in general. However, the challenge lies in ensuring the ability to share the benefits of biodiversity with the local communities who are the custodians of the resources. • Poverty reduction: Poverty reduction can be attained through bioprospecting provided benefits are shared with the local communities. • Economic growth: Both the pharmaceutical industry and the conservation-related industries are boosted through bioprospecting; if benefits are shared equitably this will further boost the local economy. • Climate change mitigation / adaptation: As bioprospecting requires biodiversity, it duly requires healthy ecosystems, which in the HoB inevitably entails health forest ecosystems. Thus, lucrative bioprospecting serves as an incentive to forest conservation and avoidance of deforestation and forest degradation and related carbon emissions.