Who?

How, what?

Why?

Where, when?

Who cares?

So what?

Negotiation-support toolkit for learning landscapes

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23 | Rapid agro-biodiversity appraisal (RABA)

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The Rapid Agro-Biodiversity Appraisal (RABA) is a diagnostic tool designed to measure the perceptions of different stakeholders about biodiversity conservation and to assess the feasibility of establishing a 'rewards for environmental services' mechanism in a target area.

■ Introduction

With rapid deforestation taking place across the tropics, the associated biodiversity loss has become a global concern. Until recently, most of the approaches to biodiversity conservation were based on a spatial segregation of functions focused on protected areas and on intensive agriculture (to reduce pressure on natural forests). The results of such endeavours, however, have been less than satisfactory. A second approach maintains biodiversity within productive landscapes.

A combination of the two approaches is most likely to retain biodiversity and agricultural production but there is always the threat of competition between conservation and economic development. Specific incentives might be needed to ensure that the conservation aspect of these systems is not lost in the process.

RABA is a tool for appraising the perspectives of stakeholders regarding biodiversity conservation and the feasibility of providing rewards for environmental services (RES) in biodiversity-rich areas. RABA uses techniques and tools based on rapid rural appraisal, stakeholder analysis and local ecological knowledge. It captures the perspectives of sellers, buyers and intermediaries and generates initial data necessary for these groups to develop a rewards system (Figure 23.1).

RABA is not a stand-alone tool for assessment of detailed biodiversity richness. Selecting an area for establishing a RES mechanism is normally based on credible information about the richness or uniqueness of existing biodiversity that may be verified through local consultations. For areas where reliable biodiversity data are unavailable, the Quick Biodiversity Survey (QBSur) of indicator flora and fauna can be used as a complementary tool.

◼ Objectives

1 Assist potential investors to explore the benefits of agrobiodiversity conservation.

2 Assist the managers of richly agrobiodiverse landscapes to understand their key selling points for investment in conservation.

3 Provide cost-effective approaches to intermediaries (brokers).
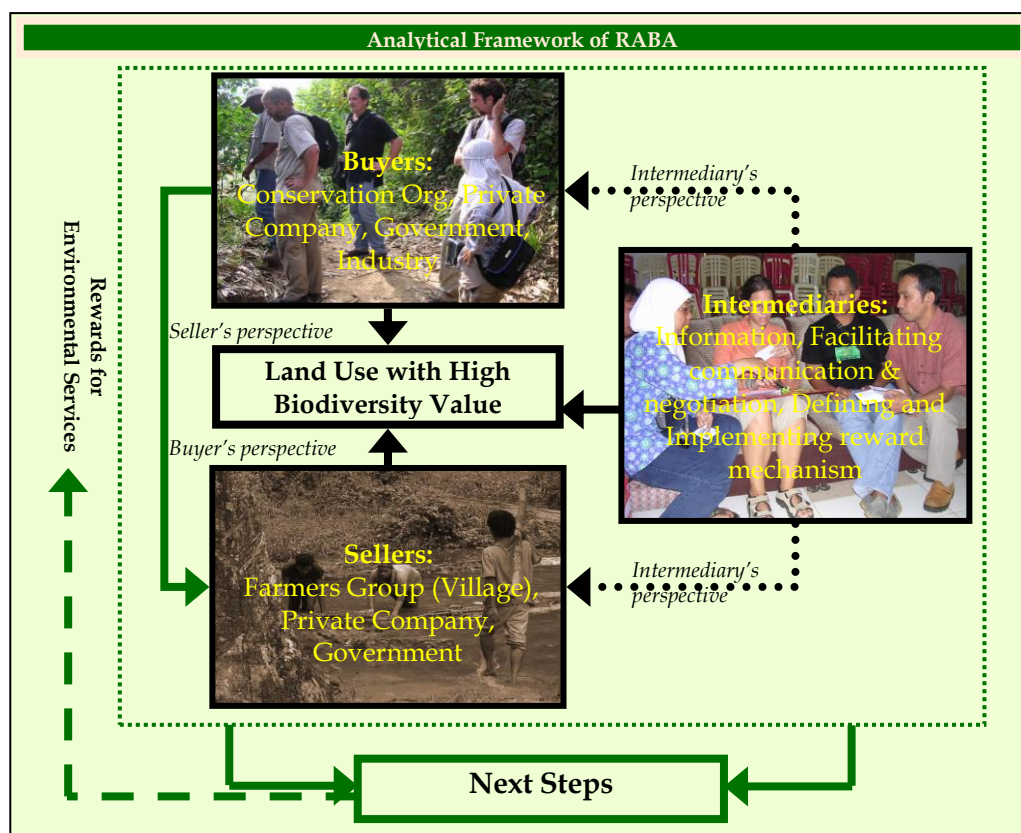
Figure 23.1. RABA analytical framework

◼ Steps

RABA involves four steps: 1) scoping; 2) identifying potential partners; 3) negotiating agreements; and 4) monitoring and evaluating compliance and outcomes (Table 23.1). Each step requires addressing a number of questions, which are detailed in the table below. As an analytical framework, RABA offers insights into, and guidance on, the important elements that should be considered in developing a RES mechanism.
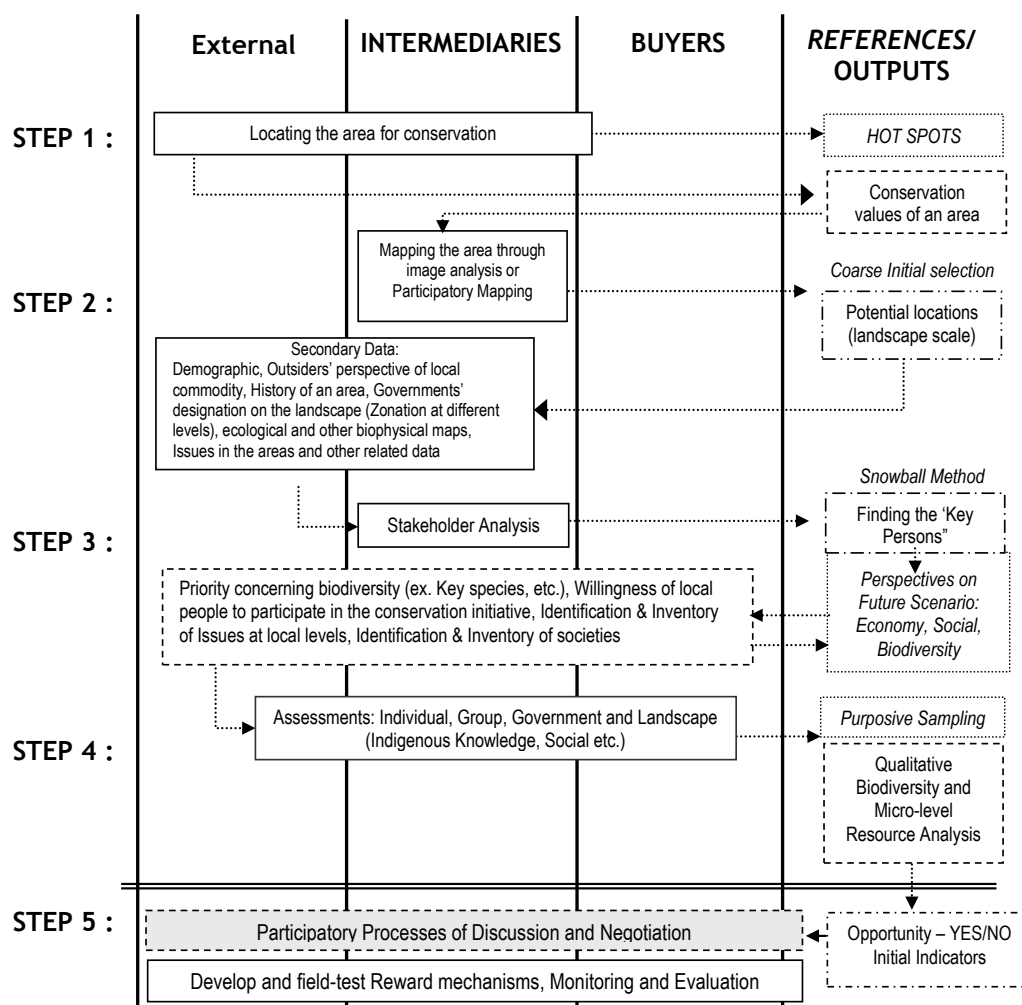
Table 23.1. Steps in a RABA appraisal

Steps	Rapid Agrobiodiversity Appraisal	Sellers' perspective	Buyers' perspective
		Communities that manage or control biodiversity-rich agroecosystems	Institutions interested in conserving agrobiodiversity
Scoping		• What do we have that is of interest to outside stakeholders? • What is the downside of conservation? • How can we benefit from maintaining biodiversity? • What 'willingness to pay' can we expect?	• Where are the areas under threat? Where are conservation activities most needed? What species and ecosystems are under threat? • Who can effectively influence conservation uses in these areas? • What 'willingness to sell' can we expect?
Identifying potential partners		• Whom should we talk to? • What documentation do we need?	• Who can effectively and equitably represent all local actors? • Does local government represent local interests?
Negotiating agreements		• How do we balance the restrictions that may be imposed on us with any rewards?	• How do we know we can trust the sellers? What are the guarantees?
Monitoring and evaluating compliance and outcomes		• How can we deal with defectors and free riders in the community? • How will we know the buyer is satisfied?	• How will compliance (at output level) be monitored? • How will outcomes be monitored?

■ RABA process

The initial stages of RABA consist of acquiring, collating and analysing data. The selection of a location for establishing RES can be based on available data and secondary information. Identifying land uses and assessing potential threats to biodiversity in the location are also important. Spatial analysis can provide baseline data to be used in pinpointing areas with potential for conservation. Participatory mapping can be a useful tool but spatial analysis using satellite imagery and aerial photographs is more objective and can help in planning and future monitoring. The next step is to identify threats to biodiversity in the area of interest and opportunities to counter these threats. Areas that are either severely or minimally threatened may not be of interest to potential buyers of environmental services. The optimal threat level is difficult to measure and depends on the context. Secondary data (biophysical, ecological, socioeconomic and policy) enriches the understanding of past, current and possible future situations.

Stakeholder analysis can help to identify people and institutions that have vested interests in resource management in the area. Stakeholder analysis is a four-step process: 1) identifying key stakeholders; 2) assessing their interest and potential impact; 3) assessing their influence and importance; and 4) outlining a strategy for their involvement in conservation. Understanding power relations between and within stakeholder groups and conflicts, current and future, is necessary for developing appropriate strategies for conservation and RES. Awareness of stakeholders' expectations is also essential.

Assessing local perceptions of agrobiodiversity indicates the relative importance that local people assign it and hence the potential for conservation. Various aspects—such as tenure and rights to land, social strata, economy and livelihoods, local knowledge about the environment and agrobiodiversity, institutions, threats and opportunities—can be explored using various tools and methods.

	External	INTERMEDIARIES	BUYERS	REFERENCES/ OUTPUTS
STEP 1 :	Locating the area for conservation			*HOT SPOTS*
				Conservation values of an area
STEP 2 :		Mapping the area through image analysis or Participatory Mapping		*Coarse Initial selection*
				Potential locations (landscape scale)
	Secondary Data: Demographic, Outsiders' perspective of local commodity, History of an area, Governments' designation on the landscape (Zonation at different levels), ecological and other biophysical maps, Issues in the areas and other related data			
STEP 3 :		Stakeholder Analysis		*Snowball Method* Finding the 'Key Persons"
	Priority concerning biodiversity (ex. Key species, etc.), Willingness of local people to participate in the conservation initiative, Identification & Inventory of Issues at local levels, Identification & Inventory of societies			*Perspectives on Future Scenario: Economy, Social, Biodiversity*
STEP 4 :		Assessments: Individual, Group, Government and Landscape (Indigenous Knowledge, Social etc.)		*Purposive Sampling* Qualitative Biodiversity and Micro-level Resource Analysis
STEP 5 :	Participatory Processes of Discussion and Negotiation			Opportunity – YES/NO Initial Indicators
	Develop and field-test Reward mechanisms, Monitoring and Evaluation			

◼ Case study: Rubber agroforests in Bungo district, Jambi province, Indonesia

Bungo district in Jambi province is located between three national parks—Bukit 12, Bukit 30 and Kerinci Seblat)—on the island of Sumatra, Indonesia. The area harbours many endemic species and, at the same time, has been significantly altered by human activities. Like many other districts in the area, Bungo is rapidly losing its forests. Previously dominant lowland tropical forests with rich biodiversity have been replaced by monoculture cultivation. Habitat for most flora and fauna is disappearing very fast and now exists only in small 'island' national parks and reserves. Fortunately, 'jungle rubber' (old, complex rubber agroforestry) systems are still commonly practised in Bungo. Previous research in Bungo indicates that these agroforests are becoming increasingly important as a reservoir of forest diversity and now provide some of the services valued in natural forests. As the financial gains from monoculture plantations are much higher than from jungle rubber, conversion to monocultures is taking place rapidly. Providing rewards for the environmental service of agrobiodiversity conservation in rubber agroforestry systems was proposed as a way to offset the opportunity costs from alternative land uses. Hence, RABA was developed and tested in the area. A graphical depication of the summary of the findings can be found below.
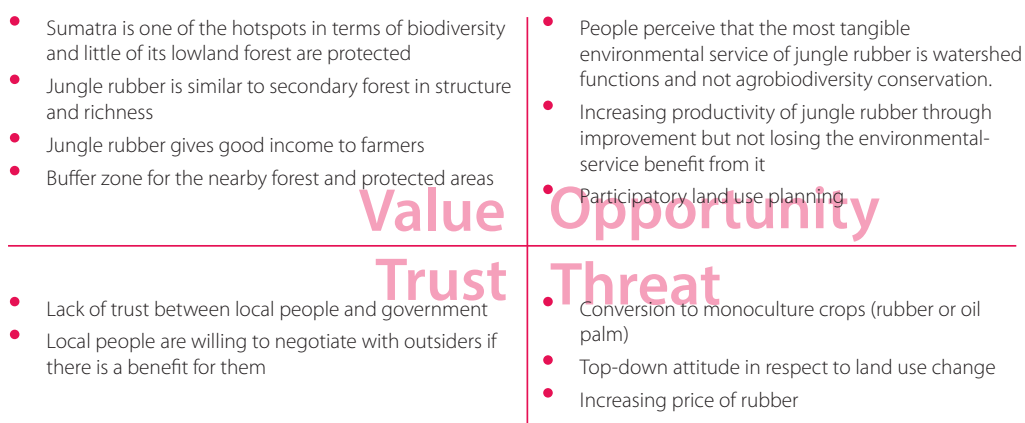
Value
- Sumatra is one of the hotspots in terms of biodiversity and little of its lowland forest are protected
- Jungle rubber is similar to secondary forest in structure and richness
- Jungle rubber gives good income to farmers
- Buffer zone for the nearby forest and protected areas

Opportunity
- People perceive that the most tangible environmental service of jungle rubber is watershed functions and not agrobiodiversity conservation.
- Increasing productivity of jungle rubber through improvement but not losing the environmental-service benefit from it
- Participatory land use planning

Trust
- Lack of trust between local people and government
- Local people are willing to negotiate with outsiders if there is a benefit for them

Threat
- Conversion to monoculture crops (rubber or oil palm)
- Top-down attitude in respect to land use change
- Increasing price of rubber

Figure 23.2. Graphical depiction of the summary findings of a rapid agrobiodiversity assessment in Bungo district, Jambi

The results of the RABA application in Bungo provided sufficient evidence and confidence to proceed with developing a RES mechanism. The understanding and recognition of environmental services provided by jungle rubber have increased, both among local villagers and external stakeholders. Efforts to develop long-term benefits through ecocertification of jungle rubber are underway.

◼ Key reference

Kuncoro SA, van Noordwijk M, Martini E, Saipothong P, Areskoug V, Eka Dinata A, O'Connor T. 2006. *Rapid Agrobiodiversity Appraisal (RABA) in the context of environmental service rewards*. Bogor, Indonesia: World Agroforestry Centre (ICRAF) Southeast Asia RegionalProgram. http://www. worldagroforestrycentre.org/sea/Publications/searchpub.asp? published=1496

The landscape scale is a meeting point for bottom–up local initiatives to secure and improve livelihoods from agriculture, agroforestry and forest management, and top–down concerns and incentives related to planetary boundaries to human resource use.

Sustainable development goals require a substantial change of direction from the past when economic growth was usually accompanied by environmental degradation, with the increase of atmospheric greenhouse gasses as a symptom, but also as an issue that needs to be managed as such.

In landscapes around the world, active learning takes place with experiments that involve changes in technology, farming systems, value chains, livelihoods' strategies and institutions. An overarching hypothesis that is being tested is:

> Investment in institutionalising rewards for the environmental services that are provided by multifunctional landscapes with trees is a cost-effective and fair way to reduce vulnerability of rural livelihoods to climate change and to avoid larger costs of specific 'adaptation' while enhancing carbon stocks in the landscape.

Such changes can't come overnight. A complex process of negotiations among stakeholders is usually needed. The divergence of knowledge and claims to knowledge is a major hurdle in the negotiation process.

The collection of tools—methods, approaches and computer models—presented here was shaped by over a decade of involvement in supporting such negotiations in landscapes where a lot is at stake. The tools are meant to support further learning and effectively sharing experience towards smarter landscape management.